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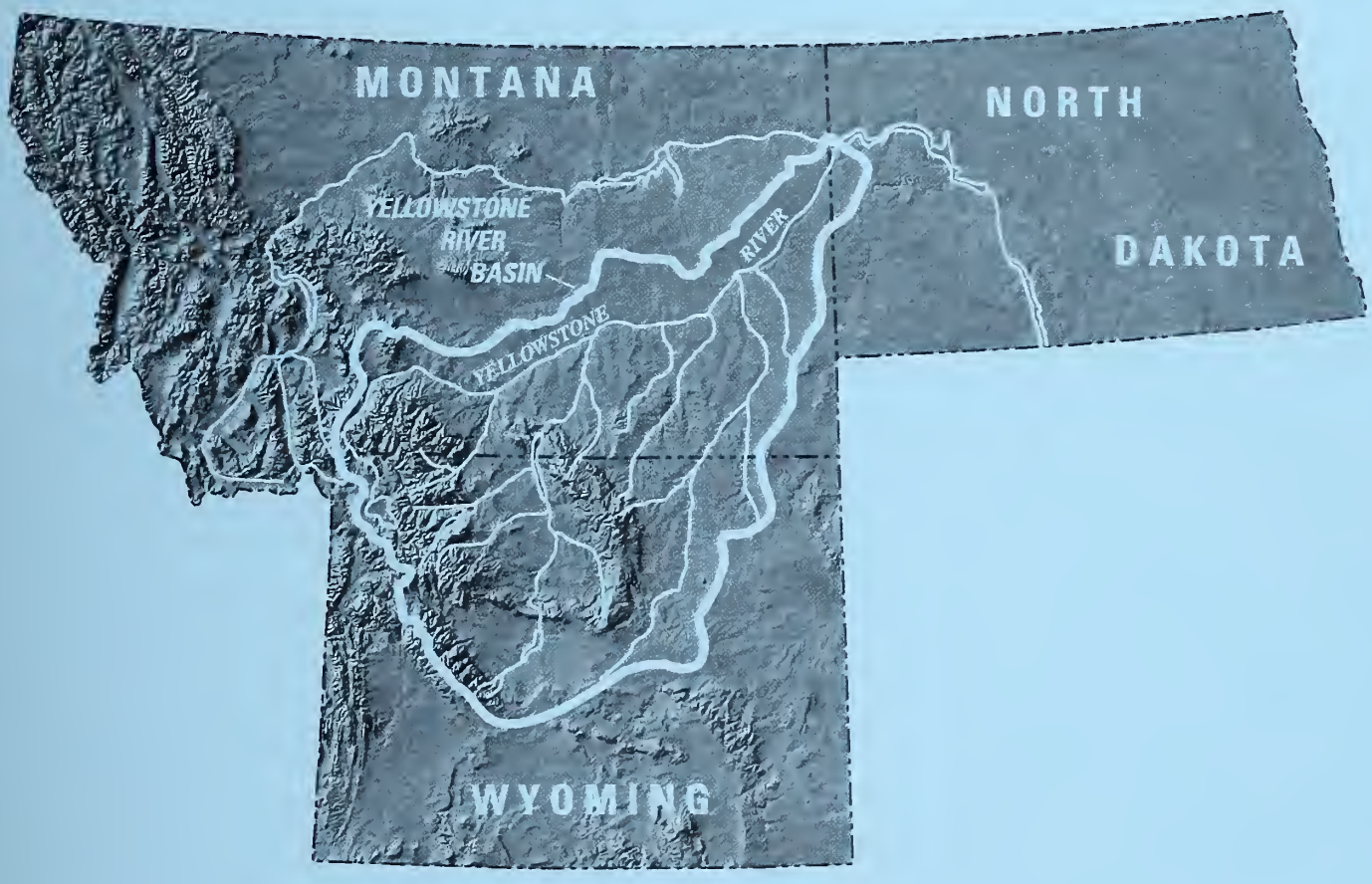
YELLOWSTONE RIVER COMPACT COMMISSION

WYOMING **MONTANA** **NORTH DAKOTA**



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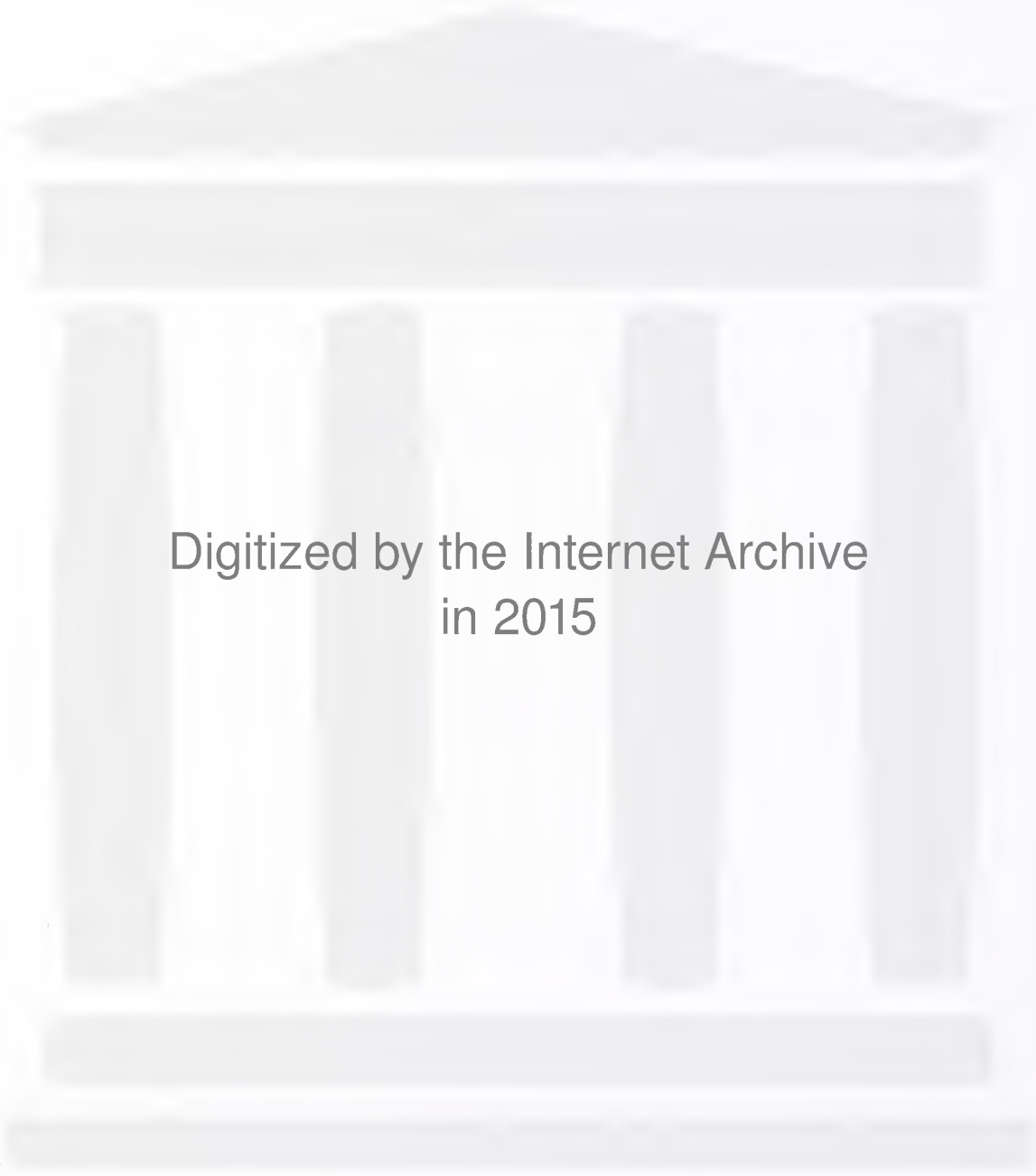
Yellowstone River

Compact Commission

Sixty-First Annual Report

2012



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[1]Wyoming disagrees with the term "Compact Reservoirs" as used throughout this annual report. Wyoming's acceptance of this annual report should not be construed as Wyoming's acceptance of the use of that term.

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Conversion Factors

Multiply	By	To obtain
	Length	
foot (ft)	0.3048	meter (m)
mile (mi)	1.609	kilometer (km)
	Area	
acre	4,047	square meter (m^2)
acre	0.4047	hectare (ha)[1]
acre	0.4047	square hectometer (hm^2)
acre	0.004047	square kilometer (km^2)
square mile (mi^2)	2.590	square kilometer (km^2)
	Volume	
cubic foot per second per day (ft^3/s)/day)	2,447	cubic meter (m^3)
cubic foot per second per day (ft^3/s)/day)	0.0002447	cubic hectometer (hm^3)
cubic foot (ft^3)	0.02832	cubic meter (m^3)
acre-foot (acre-ft)	1,233	cubic meter (m^3)
acre-foot (acre-ft)	0.001233	cubic hectometer (hm^3)
acre-foot (acre-ft)	0.000001233	cubic kilometer (km^3)
	Flow rate	
acre-foot per year (acre-ft/yr)	1,233	cubic meter per year (m^3/yr)
acre-foot per year (acre-ft/yr)	0.001233	cubic hectometer per year (hm^3/yr)
acre-foot per year (acre-ft/yr)	0.000001233	cubic kilometer per year (km^3/yr)
cubic foot per second (ft^3/s)	28.32	liter per second (L/s)
cubic foot per second (ft^3/s)	28.32	cubic decimeter per second (dm^3/s)
cubic foot per second (ft^3/s)	0.02832	cubic meter per second (m^3/s)
feet per year (ft/yr)	0.3048	meter per year (m/yr)
gallon per minute (gal/min)	0.06309	liter per second (L/s)

[1]The unit hectare is used with the International System of Units (SI), which is in common everyday use throughout the world. See: Taylor, B.E., and Thompson, Ambler, eds., 2008, The International System of Units (SI): U.S. Department of Commerce, NIST Special Publication 330, 92 p., available online at *http://physics.nist.gov/Pubs/SP330/sp330.pdf.*

YELLOWSTONE RIVER COMPACT COMMISSION
1608 MOUNTAIN VIEW ROAD
RAPID CITY, SOUTH DAKOTA 57702

Honorable Matthew Mead
Governor of the State of Wyoming
Cheyenne, Wyoming 82002

Honorable Steve Bullock
Governor of the State of Montana
Helena, Montana 59620

Honorable Jack Dalrymple
Governor of the State of North Dakota
Bismarck, North Dakota 58501

Dear Governors:
Pursuant to Article III of the Yellowstone River Compact, the Commission submits the following sixty-first annual report of activities for the period ending September 30, 2012.

Minutes of November 27, 2012

Members of the Yellowstone River Compact Commission convened on November 27, 2012, at 8:00 a.m. at a conference room at Chico Hot Springs, Mont. In attendance were Mr. Mark Anderson, U.S. Geological Survey (USGS), Chairman and Federal Representative; Ms. Mary Sexton, Director, Montana Department of Natural Resources and Conservation (DNRC) and Commissioner for Montana; and Ms. Sue Lowry, Wyoming State Engineer's Office (SEO) and Commissioner for Wyoming. Also in attendance were Mr. Loren Smith, and Mr. Carmine LoGuidice, SEO; Mr. Chris Brown, Wyoming Attorney General's Office; Mr. Tim Davis, Ms. Kim Overcast and Mr. Chuck Dalby, DNRC; Ms. Amy Steinmetz, Montana Department of Environmental Quality (DEQ); Ms. Elizabeth Meredith, Montana Bureau of Mines and Geology (via telephone); Ms. Nora Phelps and Mr. Tim Felchle, Bureau of Reclamation; Mr. Brian Domonkos, Natural Resources Conservation Service; and Mr. Kirk Miller (via telephone) and Mr. Wayne Berkas, USGS.

Mr. Anderson welcomed Ms. Sue Lowry as the new Commissioner for Wyoming.

Mr. Anderson called the meeting to order and presented the agenda. He asked if there were any additions or corrections to the agenda. There were none and the agenda was accepted by both Commissioners.

Mr. Berkas distributed a handout showing the operational cost for Fiscal Year (FY) 2012 and the estimated budgets for FY2014 through FY2016. In the past, the USGS provided 50 percent of the

operational cost using money out of the USGS Cooperative Water Program. Beginning in FY2013, the rules associated with using Cooperative Water Program money changed. Headquarters held approximately 17 percent of the money back, and as a result, the local Water Science Centers do not have to assess a national overhead on that money. The overall effect is that less money is needed by the Montana Water Science Center to support the cooperators contribution.

The handout shows the cost for streamgaging in FY2013 will be $14,750, and the cost to prepare the annual report is $36,600. The total cost for FY2013 is $110,350. The breakout of this cost is:

$30,125 for SEO,

$30,125 for DNRC, and

$50,100 for USGS.

The USGS contribution is 16.8 percent less than the combined contribution of SEO and DNRC.

The contributions requested for FY2013 and estimated for FY2014 through FY2016 are as follows:

Year	SEO	DNRC	USGS	Total
FY2013	$30,125	$30,125	$50,100	$110,350
FY2014	$30,850	$30,850	$51,300	$113,000
FY2015	$31,600	$31,600	$52,540	$115,740
FY2016	$32,550	$32,550	$54,120	$119,220

The estimated cost increases from FY2013 through FY2016 assume an increase of about 3 percent each year. The cost for each FY will not exceed those listed, but the cost might be less.

Mr. Anderson asked what tasks are funded in preparing the annual report.

Mr. Berkas replied the task of compiling the data into the report, the cost of Ms. Stokes preparing the transcript of the minutes, and the cost of condensing the minutes into a version for the annual report.

Mr. Anderson asked if the report cost was for one or two meetings.

Mr. Berkas replied that cost of the report is now for only one meeting.

Mr. Anderson asked if the Yellowstone River Technical Committee meeting is covered with report funds.

Mr. Berkas replied that the Yellowstone River Compact Commission does not fund the Yellowstone River Technical Committee.

Mr. Anderson asked if any of the Yellowstone River Compact Commission funded streamgages qualify for National Streamflow Information Program (NSIP) money.

Mr. Berkas said that all of the streamgages qualify for NSIP money.

Ms. Sexton asked, what is NSIP money and why is it not used for the Yellowstone River Compact?

Mr. Berkas replied that NSIP funds are money appropriated from Congress to fund streamgaging, providing the streamgage meets specific criteria. The funds received by the USGS Montana Water Science Center are limited, and there is not enough available money to fund all of the Yellowstone River Compact gages.

Mr. Anderson added, over time, it was recognized that the USGS contribution to the overall streamgaging effort in the Nation was decreasing. The USGS suggested to Congress that the USGS should fund more gages. Congress agreed and they began funding NSIP. A list of gaging stations that met specific criteria was established, and only those gages could be funded with NSIP funds. Using NSIP money to fund Compact streamgages might free up State money.

Ms. Sexton replied that Montana had to increase their contribution to the streamgaging network in Montana because USGS costs have increased; thus, any help from NSIP would be helpful. Any gain of Federal money into the streamgaging program would be beneficial to Montana and Wyoming. Perhaps an analysis of NSIP streamgages in Montana and Wyoming should occur next year.

Mr. Anderson said the reason he brought up NSIP is that NSIP money could be used to increase the streamgaging program, rather than taking the cost out of the Montana and Wyoming budget. I'm sure that would be a good thing.

Mr. Berkas replied that under Article I, A of the Rules and Regulations for Administration of the Yellowstone River Compact:

> "It shall be the joint and equal responsibility of the members of the States of Wyoming and Montana to collect, cause to be collected, or otherwise furnish records of tributary streamflow at the points of measurement specified in Article V (B) of the Compact, or as near thereto as is physically or economically feasible or justified."

It does not say that the USGS is to fund the streamgages for the Compact. The USGS Montana Water Science Center has been funding 50 percent of the total cost of the five Compact streamgages and the report, and the USGS has promised to continue, providing money is available. Mr. Berkas will bring up the suggestion to wholly fund the Compact streamgages with NSIP funds to the USGS Montana Water Science Center Director.

Ms. Lowry replied that the Advisory Committee on Water Commissions has been looking into having NSIP fund streamgages that are important to Compacts. But what would happen if Federal funding is cut and streamgages are discontinued? It is hard to say one gage is more important than the other. Having all gages 100 percent federally funded (NSIP) makes the streamgaging program more vulnerable than having some gages cooperatively funded.

Mr. Anderson replied that a healthy discussion on funding streamgages is needed because each State needs to have a strategy regarding the streamgaging network. Streamgages cooperatively funded

between the States and the USGS are usually the most stable, but NSIP could provide additional funds to make the streamgaging network stronger.

Ms. Lowry said that in the Bear River Basin, some streamgages administered by the Bear River Commission are now funded by NSIP money.

Mr. Anderson replied that there are Colorado River Compact streamgages funded through NSIP.

Ms. Sexton made a motion that the annual budgets be accepted and that the Commission look into other opportunities, such as NSIP, to help fund the budget. The motion was seconded by Ms. Lowry.

Mr. Berkas continued with a handout and discussion of streamflow and reservoir conditions through the 2012 water year. Streamflow was normal (normal is within 80 and 120 percent of average) at one gage site and below normal at the other three sites monitored by the Commission. Annual streamflow at Clarks Fork Yellowstone River at Edgar was 103 percent of average, and ranked 48th lowest of 74 years. The annual streamflow at Bighorn River near Bighorn (adjusted for the flow of the Little Bighorn River and change of contents in Bighorn Lake) was 77 percent of average and ranked 18th lowest of 59 years. The annual streamflow at Tongue River at Miles City was 73 percent of average and ranked 23rd lowest of 69 years. The annual streamflow at Powder River near Locate was 57 percent of average and ranked 17th lowest of 74 years. Total adjusted streamflow of the four rivers in water year 2012 was 3,092,600 acre-ft, compared to 6,852,900 acre-ft in water year 2011 and 4,119,100 acre-ft in water year 2010.

Reservoir storage in the reservoirs historically monitored and reported for the Commission decreased in all seven reservoirs (Boysen Reservoir, Anchor Reservoir, Bighorn Lake, Bull Lake, Pilot Butte Reservoir, Buffalo Bill Reservoir, and Tongue River Reservoir). The contents and the amounts of decrease are listed later in the annual report. The total usable contents of these reservoirs at the end of water year 2012 was 1,921,000 acre-ft, compared to 2,303,000 acre-ft in water year 2011 and 2,160,000 acre-ft in water year 2010. Usable contents in other reservoirs in the four river basins at the end of water year 2012 were 258,600 acre-ft compared to 369,300 acre-ft in water year 2011.

Ms. Overcast asked why streamflow at Little Bighorn River near Hardin was not included in the summary of streamflows?

Mr. Berkas replied that the streamflow information for the Little Bighorn River is included in the information for the Bighorn River. Because the Little Bighorn River does not fall under the control of the Yellowstone River Compact, the Little Bighorn streamflow information is subtracted from the discharge recorded at the site on the Bighorn River near Bighorn. The streamflow information provided for the Bighorn River near Bighorn has been adjusted for streamflow in the Little Bighorn River near Hardin and for change in contents from Bighorn Lake.

Mr. LoGuidice asked why streamflow in the Tongue River near Miles City is not adjusted for change in contents from Tongue River Reservoir.

Mr. Berkas said that someone in the past decided that only the Bighorn River would be adjusted for change in contents from Bighorn Lake. Perhaps the streamflow in the Tongue and Powder Rivers should

be adjusted for change in contents from the reservoirs in the river basins. Perhaps this is an issue the Yellowstone River Technical Committee should address.

Ms. Sexton asked for clarity on the issue and Mr. Smith responded that in the Yellowstone River Compact Commission report, the streamflow for the Bighorn River is adjusted for the streamflow in the Little Bighorn River and change in contents of Bighorn Lake. The same is not done for the Tongue River. All of the changes in reservoir contents in the Bighorn River Basin are reflected by Bighorn Lake, and similarly on the Tongue River, all of the changes to reservoir contents would be reflected by Tongue River Reservoir. Why isn't the Tongue River adjusted for change in contents from Tongue River Reservoir?

Ms. Lowry asked why the streamflow in Little Bighorn River is subtracted from the streamflow in the Bighorn River?

Mr. Berkas replied that the Compact identifies "Interstate Tributaries" (Article II, Section F) as the Clarks Fork Yellowstone River, the Bighorn River (except Little Bighorn River), the Tongue River, and the Powder River. Whenever the Bighorn River is mentioned in the Compact, the Little Bighorn River is excluded. Thus, the streamflow from the Little Bighorn River is subtracted from the Bighorn River when comparing flow in the administration of the Compact.

There was much discussion over adjusting tributary streamflows for change in contents of the major downstream reservoirs (Bighorn Lake and Tongue River Reservoir) or reporting unadjusted flows.

Ms. Sexton made a motion that the Yellowstone River Technical Committee analyze the various options for consistent reporting and provide recommendations to the Commission at the 2013 meeting. Ms. Lowry seconded the motion.

Mr. Anderson asked Wyoming to discuss administration for the past water year.

Mr. LoGuidice replied that snowmelt in the mountains draining to the Tongue River started early, but did not significantly increase flows. Administration on Little Goose Creek started in the middle of May and went out of regulation shortly after when streamflow started to increase. The Little Goose again went into regulation in July and remained in regulation for the rest of the year. Big Goose has a better source of water and went into regulation at the end of August. Regulation on the Little Tongue River began in the middle of August, regulation on Rapid Creek began in the middle of May, and regulation on Wolf Creek began in the beginning of August. The main stem of the Tongue River never went into regulation.

In the Powder River Basin, regulation on Rock Creek began in the beginning of July, regulation on French Creek began the middle of May, and regulation on Clear Creek began the end of June. Regulation on Crazy Woman Creek, North Fork Powder River, and Middle Fork Powder River began in the middle of July.

Mr. Smith continued with the Bighorn River Basin. The snowpack in the basin decreased significantly moving from the Montana/Wyoming State line to the south. Regulation on the Greybull River began near the end of April and reached the water-right date of 1893. Regulation on Gooseberry Creek began the beginning of May. Regulation on Medicine Lodge Creek began at the end of July and reached a date

of 1896. Regulation on Paint Rock Creek began the first of September. Regulation on Owl Creek began the middle of April and only some of the 1868 Tribal Reserved Water Rights were satisfied in the fall.

Mr. Anderson asked about the 1868 Tribal Reserved Water Rights.

Mr. Smith replied that the 1868 Tribal Reserved Water Rights were based on a court decree with the Wind River Indian Reservation (Northern Arapahoe and Eastern Shoshone Tribes). The courts used the Treaty of 1868 as the basis for the claim. Most of the lands in the Owl Creek drainage had 1905 and 1906 water rights, so when the water-rights settlement came through, those dates were replaced with 1868. Also, out of this settlement came rights known as "Walton" rights, which are water rights that were granted to lands that passed from tribal ownership to non-tribal ownership, and these rights also were granted the 1868 date.

Ms. Sexton asked about Lake DeSmet.

Mr. LoGuidice replied that Texaco gave the storage rights to the three counties (Sheridan, Johnson, and Campbell), which comprised the Lake DeSmet Counties Coalition. Campbell County (Gillette) phased themselves out as they could not see a benefit from that water. The remaining two counties (Sheridan and Johnson) have different opinions on how to operate the lake. Also, the Wyoming Game and Fish would like the counties to settle on a minimum pool.

Ms. Sexton asked if the counties sell the water.

Mr. LoGuidice replied there is not much of an opportunity to sell water. Most of the water usage is contracted water.

Mr. Anderson asked Montana to discuss administration for the past water year.

Ms. Sexton replied that because of good soil moisture in the spring and good reservoir storage, there were no major water shortages in the Montana portion of the Yellowstone River Basin this year.

Mr. Anderson asked the Yellowstone River Technical Committee to present their report.

Mr. Dalby reported that the Yellowstone River Technical Committee met in April 2012. The Committee discussed what reservoirs should be included in the Commission annual report (table 10) and decided that reservoirs with a usable capacity greater than 1,000 acre-ft should be included. The content information was passed on to Mr. Berkas for inclusion into the 2012 Yellowstone River Compact Commission report. There is an issue with getting end-of-year content information for Glacier Lake because accessing the lake requires a hike and sometime snow restricts passage to the lake. There is a control structure on the lake, and a local water user's group manages the contents. Usually, the lake drains by the end of the water year (September 30).

Mr. Anderson asked Wyoming to address coal-bed methane (CBM) development.

Ms. Lowry supplied a handout that listed the number of filings for CBM reservoirs in the Tongue, Little Powder, and Powder River drainages in Wyoming. She also provided a graph of the number of CBM

reservoir permits from 2003 through 2012. Ms. Lowry pointed out that the number of permitted CBM reservoirs in the Powder River drainage started to decline after 2008, while the numbers of new CBM reservoir permits have remained constant. Part of the reason for the decline in the number of permitted CBM reservoirs is that some of the reservoirs have bonds attached to them, and the operators want their bonds back. After the reservoir is reclaimed or the use has changed, the bond is released and the operator gets the bond back.

The number of CBM well applications also has decreased significantly. From April 1, 2011 to April 1, 2012, 421 permits were granted by the Wyoming Ground Water Division.

Ms. Sexton asked if the reservoirs had to meet standards and were inspected before the bond was released.

Ms. Lowry replied that the reservoirs are inspected and that is handled by Wyoming DEQ.
Mr. LoGuidice added that some of the reservoirs are converted to stock reservoirs. A stock reservoir has to be less that 20 acre-ft and the impoundment has to be less than 20 ft. tall. The ranchers know where they need stock ponds, so if the CBM reservoir does not meet the rancher's plans, the CBM reservoir is removed. The rule-of-thumb in Wyoming is that a reservoir needs 1 mi^2 of drainage area to support 20 acre-ft. If there is not enough drainage area to support 20 acre-ft, the recommendation is to either remove the reservoir or reduce the size so the reservoir will fill.

Ms. Sexton asked if the amount of water-to-gas production is regulated.

Ms. Lowry replied that the Wyoming SEO instituted a fairly aggressive policy where the producer had to show the well was for the production of gas, not just bringing water to the surface. Many users have shut down their wells, meaning they seal the well by using approved plug and abandonment procedures.

Mr. Anderson asked Montana to address CBM development.

Ms. Steinmetz replied that there are three CBM-discharge permits (Fidelity Exploration, Summit, and OW Ranch). Currently, only Fidelity Exploration is discharging treated water. Montana's standards for electrical conductance (EC) and sodium-adsorption ratio (SAR) are being reviewed by U.S. Environmental Protection Agency (EPA), and Montana hopes to hear from EPA within the year. Montana DEQ has good relations with Wyoming DEQ, and the two agencies discuss the various permits released by both States.

Mr. Anderson asked Montana to discuss the statewide adjudication.

Ms. Sexton announced the Montana Legislature added an Associate Water Judge that has the same powers as the sitting Water Court Judge. Montana DNRC asked for the judge because by 2015, there will be so much work for the Water Court Judge that the adjudication process will slow. The State hopes to have enforceable decrees by 2020. Overall, they are making great progress and some drainages have less than one-half of the claims to be examined.

Ms. Lowry asked if some basins have a Water Commissioner.

Ms. Sexton replied that when the Water Court feels the decree can be enforced, and the water users say they want it to be enforced, the water users may choose a Water Commissioner. The Water Court has no jurisdiction over enforcement; the District Courts provide the enforcement.

Mr. Anderson asked Ms. Meredith to update the Commission on the CBM groundwater network in Montana.

Ms. Meredith had a slide presentation and a summary of the presentation is as follows:

> The number of CBM producing wells in Montana has dropped significantly in the last year and the largest field, the CX field, has under 300 producing wells. The amount of gas and water produced from CBM wells in Montana reflect this decrease. Water and gas production levels are now similar to what they were in the early 2000s, just after CBM was introduced in Montana. The average water production from individual CBM wells rises after it has produced for over ten years. This rise is most likely due to the fact that the oldest wells, those that have been producing longer than ten years, are in the CX field. With fewer wells active in the field, those that remain have to pump more water to keep the field dewatered.
>
> Significant precipitation events, such as what southeastern Montana experienced during the spring of 2011, are some of the only times primary recharge is seen in deeper aquifers. The effects of this recharge is shown in elevated water levels in some wells and increased flow rates from some springs.
>
> Groundwater levels have been recovering in the CX field due to the slowed production; however, despite the significant decrease in producing wells, the recovery rate has stagnated. Water-level recovery from slowed CBM production has been seen in other fields for the first time this year, including those fields near the East Decker Mine and along the State line by Hanging Woman Creek.

Mr. Anderson asked Montana to talk about water-use issues related to development in the Williston Basin/Bakken area.

Ms. Sexton replied that there are no new wells in the Yellowstone River Basin. There are many in the Missouri River Basin. Because the fracking process requires a lot of clean water, Montana is permitting water depots; currently, there are four. DNRC is receiving more and more complaints of illegal water use and DNRC has put together some guidance for communities and individual water users regarding making application for a permit. There is a large demand for water to be used for fracking. Many of the large communities are permitted for municipal and industrial use, and they are selling water for the fracking process. Water users can convert from irrigation to industrial, but the process takes a while. The State is preparing legislation for temporary water leasing. A temporary lease would last for a year, but if they want to lease for more than a year, the owner would have to go through the lengthy conversion process.

Presently, all of the water depots are using water from the Missouri River. According to Montana Board of Oil and Gas, about 10 wells are fracked per month. It takes between two and three million gallons to frack a well. The developers store the water on site in a big tank and mix the desired cocktail.

Montana DEQ keeps track of where the water comes from and the volume being used. The used water is disposed of through groundwater injection. The Montana Board of Oil and Gas permits the injection.

Ms. Lowry commented that in Wyoming, there is some fracking activity south of the Tongue and Powder River basins, but nothing has occurred in the Tongue and Powder River Basins

Mr. Anderson asked Wyoming to update the Commission of Wyoming Board of Control activities.

Ms. Lowry replied that the Wyoming Board of Control meets quarterly and does permitting and adjudication. Mr. LoGuidice added that in the Tongue and Powder River Basin, the Wyoming SEO inspected 508 reservoirs of which 36 were CBM reservoirs. Of those CBM reservoirs, 15 were approved and 21 were not approved. The remaining 472 reservoirs were for stock watering, and 363 were approved and 109 were not approved. There were 20 groundwater adjudications, and there were 44 surface-water adjudications in the Tongue and Powder River Basin.

Mr. Smith added that in the Bighorn River Basin, the Wyoming SEO inspected 271 permits for adjudication. Of those permits, 250 of these finalized permits were for various uses, such as irrigation, miscellaneous, domestic use, etc., and the remaining 21 permits were cancelled.

Mr. Anderson asked Ms. Sexton to update the Commission on the status of the Montana/Crow Compact.

Ms. Sexton replied that Montana, the Crow Tribe, and the Federal Government filed a motion in the Montana Water Court for the entry of the Crow Compact as a preliminary decree. Notices will be mailed to the State of North Dakota and the State of Wyoming. Public meetings will occur and the objection period will be in June.

Mr. Anderson asked why this water right is called a compact.

Ms. Sexton replied that Montana decided that they did not want to litigate with all of the tribes (there are seven tribes), so a Compact Commission was set up to settle the Tribal Rights and Reserved Water Rights with the Federal Government.

Mr. Anderson asked the Bureau of Reclamation to update the Commission on the water supply in Bighorn Lake.

Mr. Felchle replied that as of November 1, the elevation of Bighorn Lake was 3,632 ft, approximately 90 percent full. In May, lake elevations were 78 percent of average and lake levels fell to 35 percent of average in July. With reduced outflows (approximately 1,750 ft^3/s) and inflows picking up, the lake elevation has climbed to the present elevation.

In November, about 70 to 75 percent of the inflow comes from releases from Boysen and Buffalo Bill Reservoirs. The rest comes from tributary inflow downstream from the two reservoirs. Planned releases from Yellowtail Dam are 1,850 ft^3/s for the winter through March. Hopefully, this release will produce a lake elevation of 3,617 ft. by the end of March. Planned releases from Boysen Reservoir for the winter are 500 ft^3/s and planned releases from Buffalo Bill Reservoir for the winter are 200 ft^3/s, and the Bureau of Reclamation hopes to make up the difference with tributary inflow. Releases from Yellowtail Dam will increase according to the snowpack.

Mr. Anderson reminded the Commissioners that he had all of the Yellowstone River Compact Commission documents and notes in his possession scanned into PDF files. Originally, the thought was to post the documents on the Yellowstone River Compact Commission Web page (*http://yrcc.usgs.gov/*). While some files are important, others are not. Also, the Commissioners need to determine what files should be available to the public.

The two State Commissioners discussed the issue and decided they wanted advice from legal counsel as to what documents should be available to the public. Thus, each State should receive a copy of the documents to review.

Ms. Sexton made a motion that the Yellowstone River Technical Committee obtain a copy of the scanned documents; each State Attorney would decide what to do with the material, and the Technical Committee would decide what electronic material would be kept in the future. The motion was seconded by Ms. Lowry.

Mr. Anderson noted that the completed Yellowstone River Compact Commission annual report is tardy. Is there something that can be done to get the report out sooner?

Mr. Berkas replied that the review process and publication holds up the report. In the past, the Secretary kept summary minutes and they were incorporated into the report with little review. Now the process of creating the minutes involves creating a verbatim transcript, paraphrasing the minutes with a fair amount of detail, the minutes are approved by both States, the final report receives a USGS review and approval; the report is published by the USGS Montana Water Science Center with help from the USGS Science Publishing Network.

Ms. Lowry said that she understands the review process, but it would be nice if the report was completed and distributed before the next meeting.

Mr. Berkas replied he would do his best to meet that goal.

Mr. Anderson said the Commission wants to recognize the service of a few people who were Commissioners or who reported to the Commission and have moved to other jobs or retired.

Ms. Sexton said that she would like to recognize the service of Mr. Art Compton to the Yellowstone River Compact Commission. Mr. Compton served as the Montana Department of Environmental Quality representative. Ms. Sexton made a motion that a resolution acknowledging Mr. Compton's contributions be read into the minutes (Appendix A). Ms. Lowry seconded the motion.

Ms. Lowry said that Wyoming would like to recognize the service of Pat Tyrrell to the Yellowstone River Compact Commission. Mr. Tyrrell served as the Wyoming Commissioner from February 2001 through June 2012. Ms. Lowry made a motion that a resolution acknowledging Mr. Tyrrell's contributions be read into the minutes (Appendix B). Ms. Sexton seconded the motion.

Mr. Dalby announced that Ms. Sexton will be retiring as the Director of Montana DNRC at the end of December (2012), and he would like to recognize her service to the Yellowstone River Compact Commission. Ms. Sexton served as the Montana Commissioner from September 2006 to present and was the first female Commissioner of the Yellowstone River Compact Commission (Appendix C).

The Commission decided to hold the next Yellowstone River Compact Commission meeting in Wyoming (at a location to be named) on December 5 (Thursday), 2013.

Mr. Anderson adjourned the meeting at 12:00 p.m.

Sue Lowry

Commisioner for Wyoming

Mary Sexton

Commissioner for Montana

Mark T. Anderson

Chairman and Federal Representative

Appendix A

WHEREAS Major Art Compton (USAF ret.) has served as the Montana Department of Environmental Quality representative and coal expert for the Yellowstone River Compact Commission meetings for many years, and

WHEREAS, Art's concise and informative presentations – along with his humor – have contributed to the enlightenment of the Compact Commission, and

WHEREAS, his ability to select fine wines and, upon request, dance with other members of the Commission are other attributes worthy of mention,

NOW THEREFORE, be it resolved that the Yellowstone River Compact Commission formally honor Mr. Compton and express our gratitude to him for his service to the Commission.

Signed:

Mary Sexton, Montana Commissioner

Sue Lowry, Wyoming Commissioner

Mark Anderson, Federal Commissioner

Appendix B

RESOLUTION of the Yellowstone River Compact Commission

In Appreciation of the Contributions of

Patrick T. Tyrrell

WHEREAS, the Yellowstone River Compact was entered into by the State of North Dakota, the State of Montana and the State of Wyoming who desired to further interstate comity and to remove all causes of present and future controversy between those states and the persons in those states with respect to the waters of the Yellowstone River and its tributaries, and to provide for an equitable division and apportionment of those waters and to encourage the beneficial use and development thereof; and,

WHEREAS, the Commissioners and advisors of the Yellowstone River Compact Commission recognize that Pat Tyrrell served as Wyoming Commissioner from February, 2001 to June, 2012; and

WHEREAS, Pat Tyrrell honorably represented the State of Wyoming in his participation in the meetings and deliberations of the Yellowstone River Compact Commission during the years he served as the Wyoming Commissioner to the Yellowstone River Compact Commission; and,

NOW, THEREFORE, BE IT RESOLVED that the Yellowstone River Compact Commission does hereby express their gratitude and appreciation for the untiring service and participation rendered by Pat Tyrrell in addressing the many water resource problems that were confronted and addressed by the Commission during Mr. Tyrrell's tenure as Wyoming Commissioner; and,

BE IT FURTHER RESOLVED that the Commission wishes Pat Tyrrell its best wishes, good health, much satisfaction and enjoyment of life in each and all endeavors he is now and in the future may undertake; and,

APPROVED, by unanimous action of the Yellowstone River Compact Commission this 27th day of November, 2012 at Chico Hot Springs, Montana.

_____

Mary Sexton, Commissioner, Montana

_____

Sue Lowry, Commissioner, Wyoming

_____

Mark Anderson, Federal Chairman

Appendix C

IN RECOGNITION and APPRECIATION of DEDICATED SERVICE

to the YELLOWSTONE RIVER COMPACT COMMISSION

and STATE of MONTANA

Commissioner Mary Sexton 2006–2012

As the Compact's first woman Commissioner in 58 years,
you broke new ground with a welcome smile and a firm hand.
We will miss your insight, understanding of complex interstate
water problems, and ability to foster effective communication.

Presented November 27, 2012
by
The Yellowstone River Compact Commission

Mark T. Anderson

Chair, Yellowstone River Compact Commission
and
U.S. Geological Survey

Sue Lowry

Wyoming Commissioner, Yellowstone River
Compact Commission

General Report

Cost of Operation and Budget

Work funded by the Yellowstone River Compact Commission, that to date has been primarily concerned with the collection of required hydrologic data, has been financed through cooperative arrangements whereby Montana and Wyoming each bear one-fourth of the cost, and the remaining one-half is borne by the United States. Salaries and necessary expenses of the State and U.S. Geological Survey representatives to the Commission and the cost to other agencies of collecting hydrologic data are not considered as expenses of the Commission.

The expenses of the Commission during Federal fiscal year 2011 were $128,000, in accordance with the budget adopted for the year.

Estimated budgets for Federal fiscal years 2013, 2014, 2015, and 2016 were tentatively adopted subject to the availability of appropriations. The budgets for the four fiscal years are summarized as follows:

Year	Wyoming State Engineer	Montana Department of Natural Resources and Conservation	U.S. Geological Survey	Total
FY2013	$30,125	$30,125	$50,100	$110,350
FY2014	$30,850	$30,850	$51,300	$113,000
FY2015	$31,600	$31,600	$52,540	$115,740
FY2016	$32,550	$32,550	$54,120	$119,220

Streamflow-Gaging Station Operation

Operation of five streamflow-gaging stations at the measuring sites specified in the Yellowstone River Compact continued in water year 2012 with satisfactory records collected at each station. Locations of streamflow-gaging stations, along with reservoir-content stations, are shown on a map of the Yellowstone River Basin at the end of this report.

The Commission is primarily interested in the streamflow near the mouths of the Clarks Fork Yellowstone River, Bighorn River, Tongue River, and Powder River. Even though the Little Bighorn River is not covered by the Yellowstone River Compact, the compact covers the water in the Bighorn River minus the Little Bighorn River. Thus, the streamflow from the Little Bighorn River is subtracted from the flow of the Bighorn River. In addition, the Bighorn River streamflow is adjusted monthly with change in storage of Bighorn Lake. Bighorn Lake began filling in 1965. During water year 2012, annual streamflow was normal[2] at one streamflow-gaging station and below normal at the other three streamflow-gaging stations. The rank of the annual streamflow, with the lowest annual streamflow having a rank of 1, is displayed in the following table:

Station number	Streamflow-gaging station	Percent of average streamflow for water year 2012[1]	Rank of annual streamflow		Year of lowest annual streamflow (rank equals 1)	Number of years of annual record
			2012 water year	2011 water year		
06208500	Clarks Fork Yellowstone River at Edgar, Mont., minus diversions to White Horse Canal	103	48	71	2001	74
06294500	Bighorn River above Tullock Creek, near Bighorn, Mont., minus Little Bighorn River near Hardin, Mont. (06294000). adjusted for change in contents in Bighorn Lake	77	18	59	2002	59
06308500	Tongue River at Miles City, Mont.	73	23	68	1961	69
06326500	Powder River near Locate, Mont.	57	17	72	2004	74

[1]Average is based on period of record at each station.

[2]The "normal" range defined in this report is 80 to 120 percent of average.

Tabulation of streamflow records for water year 2012 (tables 1–5) and graphical comparisons of statistical distribution of monthly and annual streamflow, and annual departures from mean annual streamflow (figures 1–4) are provided in the section "Summary of Discharge for Yellowstone River Compact Streamflow-Gaging Stations." The tabulated streamflow records do not account for depletions for irrigation and other uses unless otherwise noted.

Diversions

No diversions were regulated by the Commission during water year 2012.

Reservoir Contents

Reservoirs Completed After January 1, 1950

As a matter of record and general information, month-end usable contents data (tables 6–8) and descriptions of these reservoirs are given in the section "Month-end Contents for Yellowstone River Compact Reservoirs Completed after January 1, 1950." Boysen Reservoir, located on the Wind River and operated by the Bureau of Reclamation, began the water year with 651,500 acre-ft in usable contents and ended the water year with 473,600 acre-ft. Anchor Reservoir, located on South Fork Owl Creek and operated by the Bureau of Reclamation, began the water year with 396 acre-ft in usable contents and the last reported usable contents was 299 acre-ft on September 19. Bighorn Lake, a Bureau of Reclamation storage project on the Bighorn River that is the largest in the Yellowstone River Basin, contained 1,009,000 acre-ft of usable contents at the beginning of the water year and 877,300 acre-ft at the end of the water year.

Reservoirs Existing on January 1, 1950

As a matter of record and general information, month-end usable contents data for the four reservoirs in existence on January 1, 1950, upstream from the points of measurement, are given in table 9 in the section "Month-End Contents for Yellowstone River Compact Reservoirs Existing on January 1, 1950." The reservoirs are Bull Lake, Pilot Butte Reservoir, Buffalo Bill Reservoir, operated by the Bureau of Reclamation; and Tongue River Reservoir, operated under the supervision of the Water Resources Division of the Montana Department of Natural Resources and Conservation. These data are pertinent to allocation under Article V, Section C, Item 3 of the Compact.

Annual Contents of Reservoirs

Information on reservoir contents at the end of the current (2012) and previous water years for the 7 reservoirs listed above plus 23 additional reservoirs that have usable contents greater than 1,000 acre-ft was compiled at the request of the Commission. The information is provided in table 10 in the section "Water-Year-End Contents for Yellowstone River Compact Reservoirs or Lakes."

Summary of Discharge for Yellowstone River Compact Streamflow-Gaging Stations

06208500 Clarks Fork Yellowstone River at Edgar, Mont.

LOCATION.--Lat 45°27′58″, long 108°50′35″ referenced to North American Datum of 1927, in SE ¼ SE ¼ SE ¼ sec.23, T.4 S., R.23 E., Carbon County, Hydrologic Unit 10070006, on right bank 400 ft downstream from county bridge, 0.5 mi east of Edgar, 6 mi upstream from Rock Creek, and at river mile 22.1.

DRAINAGE AREA.--2,022 mi^2.

PERIOD OF RECORD.--July 1921 to September 1969, October 1986 to present.

REVISED RECORDS. -- Water Supply Paper (WSP) 1509: 1924; 1932, maximum discharge. WSP 1729: Drainage area. Water Data Report MT-04-1: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 3,460 ft, referenced to the National Geodetic Vertical Datum of 1929. Prior to August 31, 1953, nonrecording gage located at same site and elevation.

REMARKS.--Records are good except for estimated daily discharges, which are poor. Diversions for irrigation include about 41,500 acres, of which about 840 acres lie downstream from the station. In addition, about 6,300 acres of land upstream from the station are irrigated by diversions from the adjoining Rock Creek Basin. U.S. Geological Survey satellite telemeter is located at the station. Several unpublished observations of water temperature and specific conductance were made during the year. **Discharge values and summary statistics given herein have the diversions to White Horse Canal subtracted.**

Table 1. Daily mean discharge for Clarks Fork Yellowstone River at Edgar, Mont. (06208500), minus diversions to White Horse Canal, October 2011 through September 2012.

[Discharge is in cubic feet per second. Abbreviations: e, estimated; Max, maximum; Min, minimum; acre-ft, acre-feet. Symbol: ---, no data]

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	358	701	586	e500	e420	400	476	1,340	2,240	3,120	792	138
2	357	742	596	e480	e400	393	632	1,200	3,630	3,030	713	158
3	363	707	535	519	e410	387	610	1,000	5,310	2,920	650	176
4	381	630	e480	546	e410	389	532	848	6,780	2,800	603	194
5	405	676	416	488	e400	400	546	751	7,780	2,770	568	192
6	434	690	516	e480	e390	406	620	772	8,440	2,560	522	198
7	508	657	544	e450	e390	407	590	655	7,000	2,110	483	208
8	633	637	550	e430	e410	390	544	555	5,150	1,910	429	200
9	648	613	704	e450	e400	369	514	546	4,890	1,830	395	223
10	630	625	672	e460	e390	395	510	765	4,810	1,710	368	216
11	626	616	648	e440	e360	392	538	1,140	3,660	1,670	381	198
12	615	614	645	e460	e380	398	677	1,060	2,830	1,650	398	193
13	621	625	653	e470	e390	397	830	1,070	2,520	1,530	371	195
14	613	615	615	e500	e400	399	735	1,250	2,940	1,460	365	212
15	608	611	595	e510	e390	401	693	1,740	3,480	1,480	372	236
16	623	607	585	e340	e370	411	668	2,480	3,390	1,530	384	258
17	685	571	599	e320	380	429	630	3,230	3,400	1,780	361	282
18	798	e520	617	e330	381	462	621	3,700	4,100	1,790	313	276
19	731	e500	595	e320	391	495	609	3,580	4,770	1,550	295	283
20	694	e470	e560	e400	384	488	592	2,860	4,240	1,320	275	294
21	679	e560	537	e440	372	426	564	2,500	3,430	1,190	242	281
22	680	761	620	e480	382	407	581	2,790	3,330	1,110	224	278
23	661	735	637	e460	398	406	870	4,080	3,820	1,050	219	282
24	659	714	587	e420	398	412	1,280	3,700	4,500	1,030	206	286
25	677	635	574	e410	377	477	2,200	2,840	5,080	1,000	199	289
26	729	616	604	e420	380	538	2,790	2,550	5,130	955	199	300
27	728	570	613	e440	378	590	2,830	2,380	5,040	901	190	297
28	697	568	543	e420	369	572	2,480	2,220	4,280	980	165	304
29	690	602	562	e390	390	527	1,970	1,990	3,480	1,060	145	304
30	685	600	575	e410	---	511	1,590	1,980	3,210	1,050	133	307
31	682	---	585	e430	---	487	---	2,010	---	946	132	---
Total	18,898	18,788	18,148	13,613	11,290	13,561	29,322	59,582	132,660	51,792	11,091	7,258
Mean	610	626	585	439	389	437	977	1,922	4,422	1,671	358	242
Max	798	761	704	546	420	590	2,830	4,080	8,440	3,120	792	307
Min	357	470	416	320	360	369	476	546	2,240	901	132	138
Acre-ft	37,480	37,270	36,000	27,000	22,390	26,900	58,160	118,200	263,100	102,700	22,000	14,400

SUMMARY STATISTICS

	Water year 2012	Water years 1921–2012*
Annual total	386,003	---
Annual mean	1,055	1,028
Annual runoff (acre-ft)	765,600	744,400

*During periods of operation (water years 1921–69, 1987 to water year 2012).

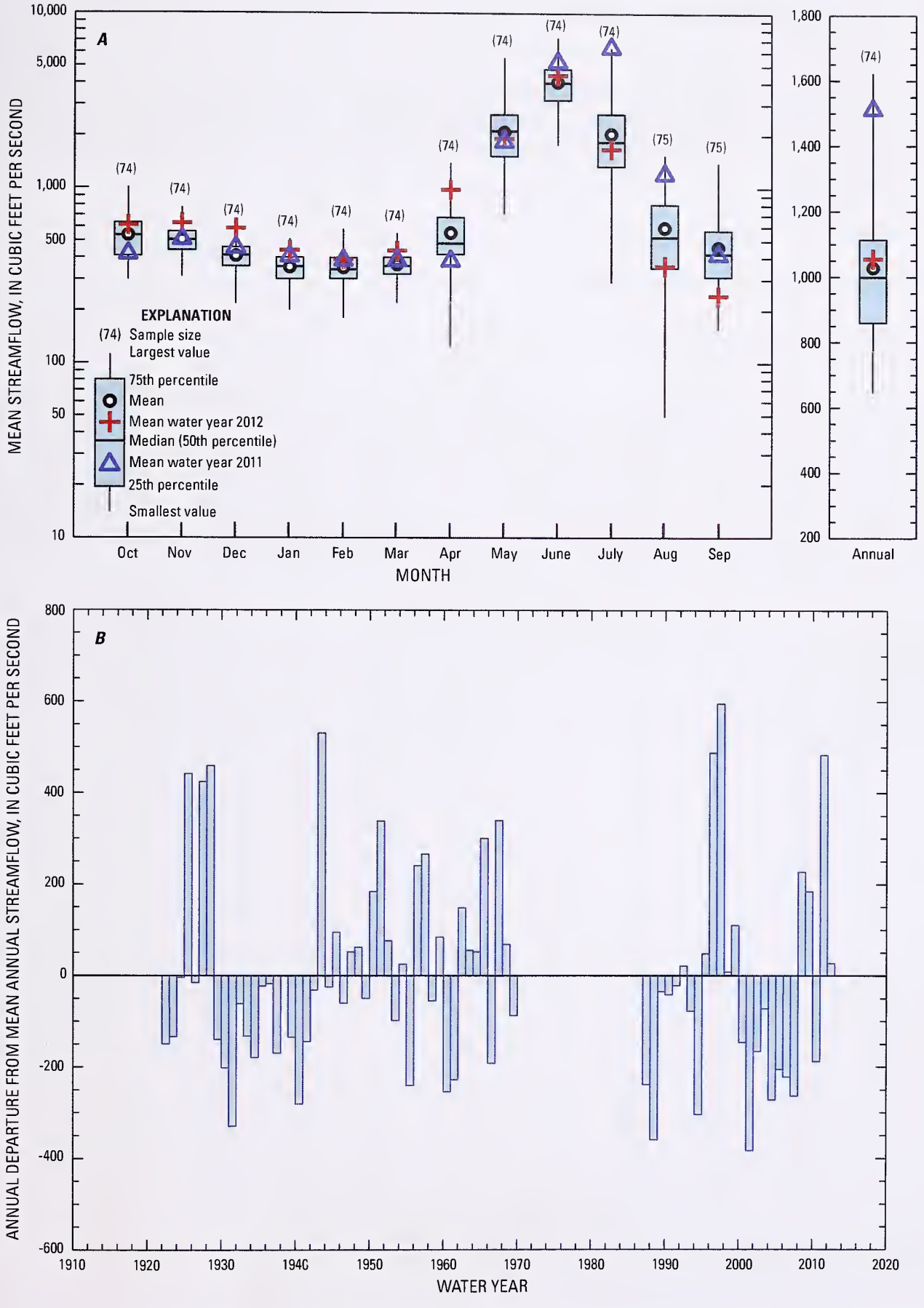

Figure 1. Streamflow data for Clarks Fork Yellowstone River at Edgar, Mont. (06208500), minus diversions to White Horse Canal, water years 1921–2012. *A*, Statistical distribution of monthly and annual streamflow. *B*, Annual departure from the mean annual streamflow.

06294000 Little Bighorn River near Hardin, Mont.

LOCATION.--Lat 45°44′09″, long 107°33′24″ referenced to North American Datum of 1927, in SE ¼ NE ¼ NE ¼ sec.19, T.1 S., R.34 E., Big Horn County, Hydrologic Unit 10080016, on left bank 50 ft downstream from bridge on Sarpy Road, 0.2 mi upstream from terminal wasteway of Agency Canal, 0.6 mi upstream from mouth, and 2.3 mi east of Hardin.

DRAINAGE AREA.--1,294 mi^2.

PERIOD OF RECORD.--June 1953 to present.

REVISED RECORDS.--Water Data Report MT-86-1: 1978.

GAGE.--Water-stage recorder. Elevation of gage is 2,882.29 ft, referenced to the National Geodetic Vertical Datum of 1929 (levels by U.S. Army Corps of Engineers). Prior to October 7, 1953, nonrecording gage located at site 0.4 mi downstream. October 7, 1953 to May 6, 1963, water-stage recorder located at site 0.3 mi downstream. May 6, 1963 to November 6, 1963, nonrecording gage located at site 0.4 mi downstream. All locations had different elevations. November 7, 1963 to August 15, 1976, water-stage recorder located at site 35 ft downstream at present elevation. August 15, 1976 to September 30, 1979, water-stage recorders were located on each bank downstream from Sarpy Road Bridge and were used depending on control conditions.

REMARKS.--Records are good except for estimated daily discharges, which are poor. Streamflow partly regulated by Willow Creek Reservoir (capacity 23,000 acre-ft). Diversions for irrigation include 20,980 acres upstream from station. **Discharge values and summary statistics given herein include the flow of terminal wasteway of Agency Canal.** U.S. Geological Survey satellite telemeter is located at the station. Several unpublished observations of water temperature and specific conductance were made during the year.

Table 2. Daily mean discharge for Little Bighorn River near Hardin, Mont. (06294000), October 2011 through September 2012.

[Discharge is in cubic feet per second. Abbreviations: e, estimated; Max, maximum; Min, minimum; acre-ft, acre-feet. Symbol: ---, no data]

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	166	194	e180	e180	e180	e260	218	437	514	210	99	49
2	166	199	e180	e170	e180	e250	217	376	493	180	92	48
3	167	215	e170	e180	e170	e240	226	330	569	164	76	47
4	163	205	e160	e180	e160	e250	234	307	719	154	75	37
5	163	202	e140	e170	e160	e300	228	293	849	150	84	34
6	164	206	e130	e170	e160	e500	225	283	863	147	86	36
7	186	e200	e140	e170	e160	e400	223	282	937	140	77	52
8	257	197	e180	e180	e160	e330	222	264	908	129	73	62
9	342	188	e220	e150	e160	e290	220	237	780	112	68	68
10	276	190	e210	e150	e150	304	214	228	726	90	62	69
11	237	187	e210	e140	e140	321	210	226	734	83	63	66
12	218	191	e200	e140	e150	338	207	242	634	78	61	65
13	209	196	e210	e140	e160	330	211	238	590	76	59	73
14	204	195	e210	e140	e160	305	228	224	500	82	55	83
15	202	193	e210	e120	e160	287	240	174	465	82	53	89
16	204	190	e220	e110	e160	278	251	197	452	72	55	84
17	204	188	e210	e120	e160	261	251	236	433	80	56	83
18	204	181	e190	e110	e160	254	242	301	425	87	63	81
19	212	e170	e190	e100	e150	272	237	390	421	120	55	85
20	207	e160	e190	e130	e140	280	231	504	416	107	43	82
21	203	e180	e190	e160	e140	277	228	499	405	108	38	72
22	203	e200	e190	e200	e200	259	222	471	371	109	35	67
23	200	e200	e180	e210	e400	244	214	487	320	107	34	59
24	197	e190	e180	e220	e600	234	208	576	296	105	33	52
25	198	e180	e180	e210	e400	229	215	582	289	99	34	54
26	206	e180	e180	e200	e300	228	238	603	277	87	45	57
27	218	e190	e180	e190	e280	228	277	622	260	86	51	63
28	208	e180	e180	e180	e250	227	354	629	246	91	46	67
29	203	e180	e180	e180	e250	228	463	577	238	85	47	69
30	202	e180	e180	e170	---	224	519	530	220	90	51	67
31	200	---	e180	e190	---	221	---	524	---	99	50	---
Total	6,389	5,707	5,750	5,060	6,000	8,649	7,473	11,869	15,350	3,409	1,819	1,920
Mean	206	190	185	163	207	279	249	383	512	110	58.7	64.0
Max	342	215	220	220	600	500	519	629	937	210	99	89
Min	163	160	130	100	140	221	207	174	220	72	33	34
Acre-ft	12,670	11,320	11,410	10,040	11,900	17,160	14,820	23,540	30,450	6,760	3,610	3,810

SUMMARY STATISTICS

	Water year 2012	Water years 1954–2012
Annual total	79,395	---
Annual mean	217	276
Annual runoff (acre-ft)	157,500	199,900

06294500 Bighorn River above Tullock Creek, near Bighorn, Mont.

LOCATION.--Lat 46°07′29″, long 107°28′06″ referenced to North American Datum of 1927, in SE ¼ SE ¼ NE ¼ sec.3, T.4 N., R.34 E., Treasure County, Hydrologic Unit 10080015, on right bank 1.9 mi upstream from Tullock Creek, 3.6 mi southwest of Bighorn, 4.5 mi southeast of Custer, and at river mile 3.0.

DRAINAGE AREA.--22,414 mi^2. Area at site used October 7, 1955 to September 30, 1981, 22,885 mi^2.

PERIOD OF RECORD.--October 1981 to present. Previously published as "06294700 Bighorn River at Bighorn, MT" from 1956-81, and as "06294700 Bighorn River near Custer" from 1945-55. Flows are equivalent at all sites.

GAGE.--Water-stage recorder. Elevation of gage is 2,700 ft, referenced to the National Geodetic Vertical Datum of 1929. May 11, 1945 to December 6, 1945, nonrecording gage, and December 7, 1945 to October 6, 1955, water-stage recorder located 1.7 mi upstream at different elevation. October 7, 1955 to September 30, 1981, located at site 2.3 mi downstream at different elevation.

REMARKS.--Records are good except for estimated daily discharges, which are poor. After November 1965, flow has been regulated by Bighorn Lake (usable contents, 1,312,000 acre-ft). Major regulation prior to November 1965 occurred from 14 reservoirs in Wyoming and 1 in Montana with combined usable contents of about 1,400,000 acre-ft. Diversion for irrigation of about 445,200 acres occurs upstream from the station. U.S. Geological Survey satellite telemeter is located at the station. Several unpublished observations of water temperature and specific conductance were made during the year.

Table 3. Daily mean discharge for Bighorn River above Tullock Creek, near Bighorn, Mont. (06294500), October 2011 through September 2012.

[Discharge is in cubic feet per second. Abbreviations: e, estimated; Max, maximum; Min, minimum; acre-ft, acre-feet. Symbol: ---, no data]

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	3,600	4,010	3,720	3,520	3,570	3,480	3,130	3,420	2,430	2,180	1,910	1,880
2	3,620	3,930	3,580	3,500	3,580	3,480	3,140	3,210	2,570	2,190	1,930	1,910
3	3,660	3,970	3,520	3,530	3,540	3,450	3,160	3,070	2,560	2,150	1,910	1,900
4	3,670	4,000	3,510	3,480	3,480	3,470	3,170	3,000	2,610	2,190	1,960	1,910
5	3,690	3,820	3,500	3,510	3,440	3,530	3,190	3,020	2,680	2,250	1,970	1,890
6	3,550	3,620	3,450	3,520	3,420	3,790	3,200	3,040	2,650	2,220	1,980	1,850
7	3,570	3,610	3,450	3,490	3,410	3,910	3,210	2,990	2,650	2,010	1,890	1,830
8	3,610	3,620	3,530	3,480	3,400	3,650	3,190	2,830	2,700	1,960	1,830	1,840
9	3,750	3,630	3,510	3,490	3,400	3,520	3,180	2,680	2,590	1,920	1,820	1,840
10	3,730	3,650	3,540	3,470	3,410	3,480	5,040	2,270	2,560	1,830	1,820	1,840
11	3,670	3,680	3,540	3,470	3,380	3,500	7,220	2,050	2,600	1,830	1,860	1,810
12	3,900	3,700	3,570	3,420	3,380	3,500	5,170	2,030	2,470	1,850	1,920	1,880
13	4,220	3,730	3,550	3,440	3,360	3,390	3,470	2,040	2,390	1,870	1,910	1,950
14	4,400	3,750	3,560	3,460	3,370	3,320	3,270	2,040	2,320	1,910	1,850	1,940
15	4,600	3,640	3,530	3,470	3,390	3,280	3,320	1,940	2,240	1,970	1,840	1,900
16	4,690	3,500	3,500	3,480	3,380	3,280	3,300	1,890	2,260	1,960	1,910	1,880
17	4,770	3,500	3,500	3,520	3,380	3,250	3,080	2,060	2,280	1,980	1,900	1,860
18	4,840	3,540	3,500	3,430	3,370	3,230	2,820	2,070	2,300	2,000	1,900	1,860
19	4,940	3,540	3,530	e3,300	3,380	3,310	2,810	2,250	2,260	2,050	1,890	1,840
20	5,020	3,480	3,490	e3,300	3,380	3,280	2,870	2,390	2,240	2,040	1,860	1,840
21	5,100	3,490	3,530	e3,400	3,390	3,250	2,890	2,490	2,150	2,060	1,740	1,840
22	5,160	3,530	3,520	e3,400	3,450	3,230	2,820	2,420	2,100	2,060	1,730	1,800
23	5,210	3,630	3,460	e3,400	3,890	3,190	2,840	2,430	2,180	2,010	1,790	1,790
24	5,270	3,680	3,430	e3,400	4,340	3,160	2,830	2,490	2,170	1,940	1,830	1,750
25	5,040	3,680	3,420	e3,400	4,690	3,140	2,780	2,550	2,170	1,900	1,820	1,730
26	4,790	3,660	3,460	e3,400	3,910	3,140	2,800	2,720	2,090	1,840	1,830	1,720
27	4,840	3,680	3,460	3,450	3,600	3,140	2,900	2,820	2,020	1,840	1,860	1,780
28	4,600	3,720	3,470	3,440	3,500	3,130	3,140	2,840	2,030	1,880	1,800	1,790
29	4,340	3,680	3,510	3,430	3,460	3,140	3,440	2,870	2,040	1,880	1,820	1,780
30	4,360	3,740	3,500	3,460	---	3,140	3,460	2,720	2,110	1,900	1,830	1,750
31	4,390	---	3,560	3,500	---	3,140	---	2,420	---	1,890	1,870	---
Total	134,600	110,410	108,900	106,960	102,650	103,900	100,840	79,060	70,420	61,560	57,780	55,180
Mean	4,342	3,680	3,513	3,450	3,540	3,352	3,361	2,550	2,347	1,986	1,864	1,839
Max	5,270	4,010	3,720	3,530	4,690	3,910	7,220	3,420	2,700	2,250	1,980	1,950
Min	3,550	3,480	3,420	3,300	3,360	3,130	2,780	1,890	2,020	1,830	1,730	1,720
Acre-ft	267,000	219,000	216,000	212,200	203,600	206,100	200,000	156,800	139,700	122,100	114,600	109,400

SUMMARY STATISTICS

	Water year 2012	Water years 1945–2012
Annual total	1,092,260	---
Annual mean	2,984	3,678
Annual runoff (acre-ft)	2,166,000	2,665,000

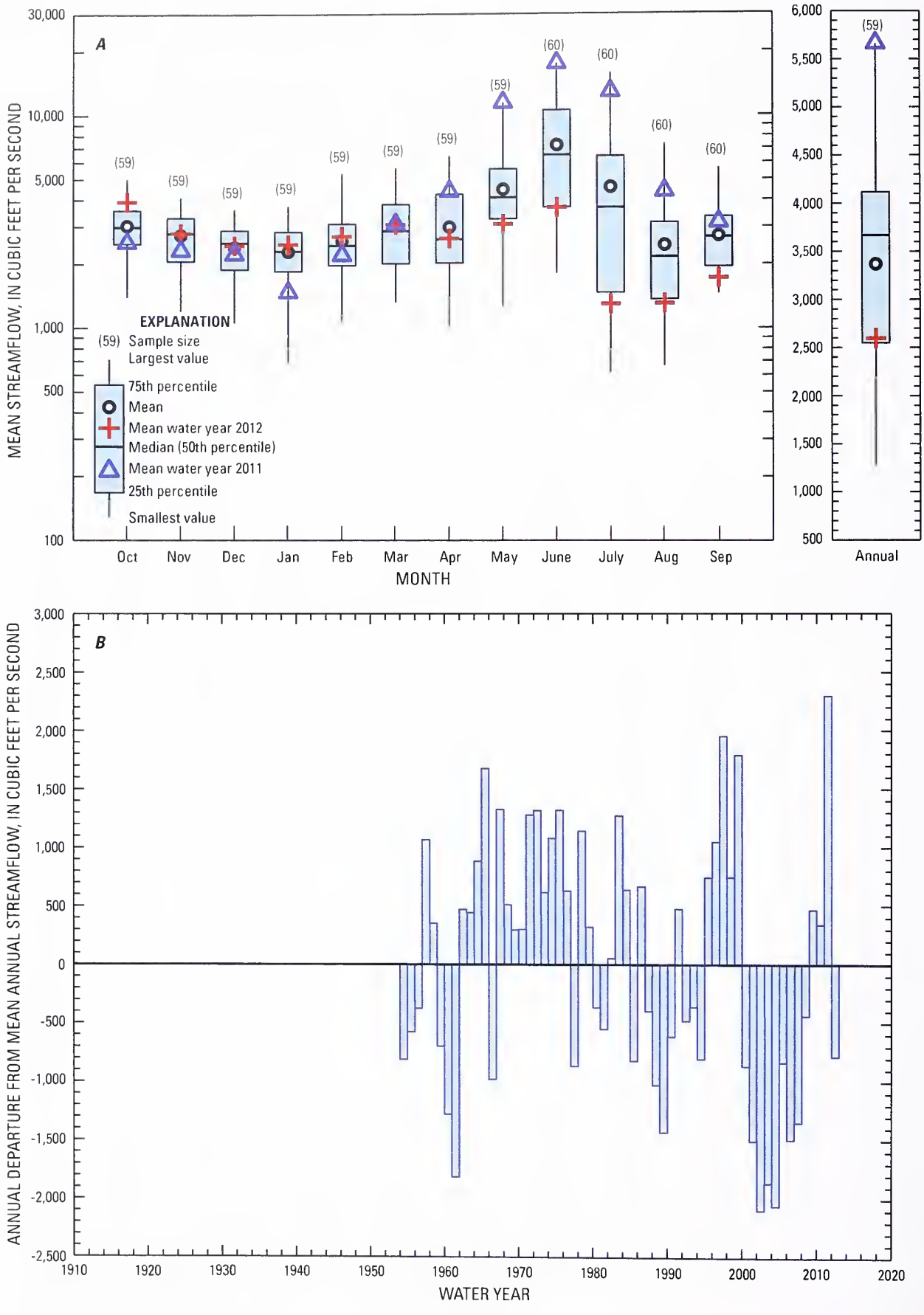

Figure 2. Streamflow data for Bighorn River above Tullock Creek, near Bighorn, Mont. (06294500), minus Little Bighorn River near Hardin, Mont. (06294000); adjusted for change in contents in Bighorn Lake, water years 1954–2012. *A*, Statistical distribution of monthly and annual streamflow. *B*, Annual departure from the mean annual streamflow.

06308500 Tongue River at Miles City, Mont.

LOCATION.--Lat 46°23′05″, long 105°50′41″ referenced to North American Datum of 1927, in SE ¼ SE ¼ SE ¼ sec.4, T.7 N., R.47 E., Custer County, Hydrologic Unit 10090102, on right bank 1.5 mi south of Miles City and at river mile 2.3.

DRAINAGE AREA.--5,397 mi^2. Area at site used prior to October 4, 1995, 5,379 mi^2.

PERIOD OF RECORD.--April 1938 to April 1942, April 1946 to present. Published as "near Miles City" April 1938 to April 1942. Not equivalent to records published as "near Miles City" May 1929 to October 1932. April 1946 to October 4, 1995, at site 2.5 mi upstream from present site. Flows at present site are equivalent with flows at site operated from 1946. Monthly discharge only for some periods, published in Water Supply Paper (WSP) 1309.

REVISED RECORDS. -- WSP 1729: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 2,360 ft, referenced to the National Geodetic Vertical Datum of 1929. April 1938 to April 1942, nonrecording gage located at site 8 mi upstream from present site at different elevation. April 1946 to September 30, 1963, located at elevation 1.00 ft higher than present site. October 4, 1995, gage was moved 2.5 mi downstream.

REMARKS.--Records are good except for estimated daily discharges, which are poor. Flow is regulated by Tongue River Reservoir (station 06307000) with usable contents of 79,070 acre-ft, and many small reservoirs in Wyoming with combined capacity about 15,000 acre-ft. Diversions for irrigation include about 100,800 acres upstream from station. U.S. Geological Survey satellite telemeter is located at the station.

Table 4. Daily mean discharge for Tongue River at Miles City, Mont. (06308500), October 2011 through September 2012.

[Discharge is in cubic feet per second. Abbreviations: e, estimated; Max, maximum; Min, minimum; acre-ft, acre-feet. Symbol: ---, no data]

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	144	331	e280	e270	e400	e520	543	377	271	189	95	89
2	137	337	e270	e260	e370	e540	521	356	401	174	94	118
3	153	340	e230	e270	e350	e560	488	345	443	138	84	129
4	174	343	e190	e270	e350	e600	475	337	449	89	105	146
5	187	347	e150	e280	e340	e580	440	329	464	74	111	152
6	128	359	e200	e280	e330	e600	407	334	507	63	106	145
7	160	355	e220	e280	e340	e1,200	389	346	694	60	88	143
8	230	348	e260	e270	e320	e1,000	377	356	909	108	73	153
9	237	351	e280	e270	e300	e900	368	290	1,040	114	78	149
10	249	345	e260	e270	e290	e850	362	205	1,110	81	58	132
11	234	347	e260	e250	e280	773	356	195	1,040	58	67	110
12	225	348	e260	e260	e280	739	353	184	953	59	96	119
13	224	349	e250	e250	e300	729	348	203	875	48	121	130
14	225	352	e270	e250	e320	710	347	190	815	70	120	132
15	233	355	e270	e260	e300	690	345	103	741	79	114	128
16	261	358	e260	e250	e300	675	342	74	642	86	109	139
17	263	377	e270	e220	e310	675	345	77	584	117	118	135
18	260	369	e260	e190	e300	682	346	60	565	143	83	133
19	259	e220	e260	e140	e290	678	344	59	547	151	61	117
20	259	e190	e260	e150	e280	676	347	59	519	158	76	104
21	259	e150	e250	e160	e280	671	342	51	477	129	77	88
22	259	e170	e240	e130	e300	664	331	54	444	142	76	70
23	262	e210	e250	e200	e370	659	348	58	402	141	71	65
24	261	e280	e260	e240	e450	653	364	49	372	166	86	63
25	261	e430	e260	e250	e500	650	369	46	354	170	106	62
26	269	e450	e260	e280	e800	648	372	55	322	146	114	32
27	281	e420	e270	e290	e1,100	655	372	96	274	137	109	28
28	285	e320	e280	e280	e680	646	400	138	243	143	106	31
29	297	e320	e290	e290	e580	632	404	141	216	140	86	17
30	310	e260	e290	e300	---	600	394	122	204	127	80	18
31	315	---	e280	e340	---	567	---	138	---	109	73	---
Total	7,301	9,731	7,890	7,700	11,410	21,422	11,539	5,427	16,877	3,609	2,841	3,077
Mean	236	324	255	248	393	691	385	175	563	116	91.6	103
Max	315	450	290	340	1,100	1,200	543	377	1,110	189	121	153
Min	128	150	150	130	280	520	331	46	204	48	58	17
Acre-ft	14,480	19,300	15,650	15,270	22,630	42,490	22,890	10,760	33,480	7,160	5,640	6,100

SUMMARY STATISTICS

	Water year 2012	Water years 1938–2012*
Annual total	108,824	---
Annual mean	297	407
Annual runoff (acre-ft)	215,900	295,100

*During periods of operation (April 1938 to April 1942, April 1946 to water year 2012).

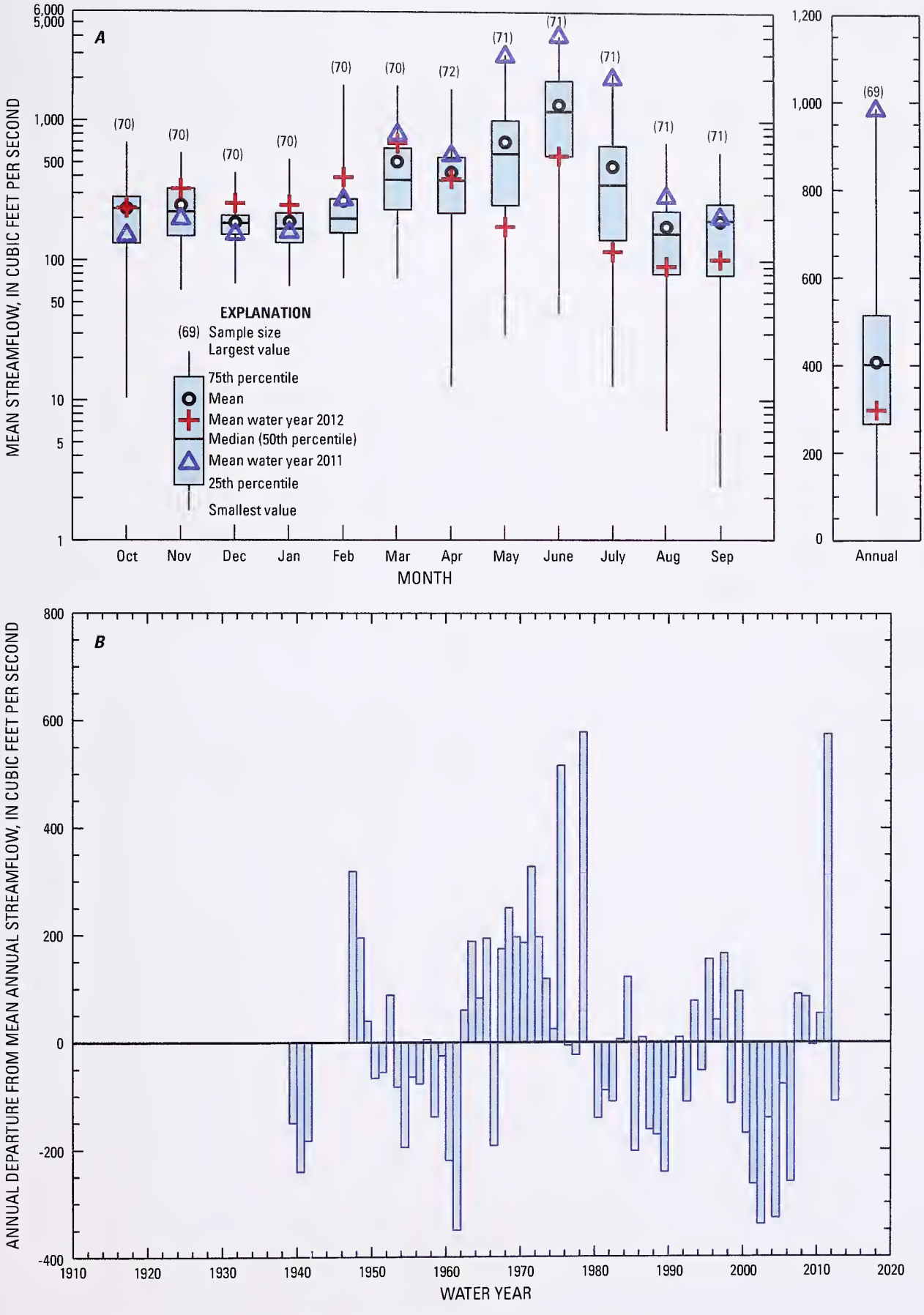

Figure 3. Streamflow data for Tongue River at Miles City, Mont. (06308500), water years 1938–2012. *A*, Statistical distribution of monthly and annual streamflow. *B*, Annual departure from the mean annual streamflow.

06326500 Powder River near Locate, Mont.

LOCATION.--Lat 46°25′48″, long 105°18′34″ referenced to North American Datum of 1927, in SW ¼ SW ¼ SE ¼ sec.23, T.8 N., R.51 E., Custer County, Hydrologic Unit 10090209, on left bank at downstream side of bridge on U.S. Highway 12, 0.1 mi west of Locate, and 25 mi east of Miles City, and at river mile 29.4.

DRAINAGE AREA.--13,068 mi^2.

PERIOD OF RECORD.--March 1938 to present.

REVISED RECORDS. -- Water Supply Paper (WSP) 926: 1939. WSP 1309: 1938-39, maximum discharge. WSP 1729: Drainage area. Water Data Report MT-04-1: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 2,384.79 ft, referenced to the National Geodetic Vertical Datum of 1929 (levels by U.S. Army Corps of Engineers). Prior to July 11, 1947, nonrecording gage located at bridge 1.5 mi upstream, and July 11, 1947 to September 30, 1965, water-stage recorder located at site near upstream bridge at different elevation. October 1, 1965 to October 4, 1966, nonrecording gage, and October 5, 1966 to March 21, 1978, water-stage recorder located at present site and elevation. March 22, 1978 to April 23, 1981, water-stage recorder located 1.5 mi upstream at different elevation, April 24 to August 20, 1981, water-stage recorder located at present site and elevation, and August 21, 1981 to September 30, 1981, water-stage recorder located 1.5 mi upstream at different elevation. October 1, 1981 to April 5, 1995 water-stage recorder located at site 1.5 mi downstream at different elevation. April 7, 1995 to present, water-stage recorders located on each bank and used depending on control conditions.

REMARKS.--Records are fair except for estimated daily discharges, which are poor. Some regulation occurs by three reservoirs in Wyoming with combined usable contents of 36,800 acre-ft. Diversions for irrigation include about 101,800 acres upstream from station. U.S. Geological Survey satellite telemeter is located at the station.

Table 5. Daily mean discharge for Powder River near Locate, Mont. (06326500), October 2011 through September 2012.

[Discharge is in cubic feet per second. Abbreviations: e, estimated; Max, maximum; Min, minimum; acre-ft, acre-feet. Symbol: ---, no data]

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	174	287	e400	e270	e320	e650	642	464	288	152	e13	3.5
2	174	287	e380	e280	e310	e550	627	511	568	144	12	3.1
3	173	291	e360	e290	e300	e500	624	573	576	116	e12	3.1
4	174	297	e320	e300	e310	e480	611	570	512	89	e13	3.1
5	171	299	e270	e300	e320	e560	592	616	451	75	11	3.1
6	168	303	e250	e290	e290	e640	595	578	415	126	11	4.0
7	168	320	e230	e280	e300	e720	579	547	419	91	e10	5.3
8	174	326	e220	e290	e310	e840	545	572	650	65	9.1	6.3
9	186	329	e250	e300	e320	e1,000	547	561	776	50	8.9	7.1
10	186	343	e260	e300	e260	1,300	563	529	873	44	8.4	7.0
11	186	339	e250	e270	e270	2,040	541	508	e820	38	9.3	6.8
12	181	330	e250	e280	e300	1,940	526	475	e755	33	10	6.7
13	201	319	e240	e300	e330	1,690	513	435	706	e25	e11	7.1
14	265	321	e250	e300	e330	1,480	515	427	653	e25	9.9	7.0
15	273	321	e260	e290	e320	1,420	491	424	644	25	e9.5	7.2
16	292	330	e270	e260	e320	1,330	505	392	604	26	9.0	7.4
17	323	339	e280	e270	e320	1,210	506	359	538	27	13	7.9
18	326	381	e280	e260	e340	1,090	537	327	486	32	19	8.5
19	324	397	e270	e220	e340	1,010	538	323	436	29	18	8.3
20	320	e200	e270	e240	e350	919	519	309	400	26	13	8.1
21	320	e120	e260	e270	e350	863	533	280	375	24	8.8	8.0
22	318	e180	e260	e280	e350	820	536	256	329	21	6.9	8.3
23	315	e230	e260	e290	e370	787	521	217	288	e18	5.3	9.4
24	315	e280	e270	e300	e360	747	483	187	253	e24	e4.5	10
25	291	e300	e280	e320	e350	718	444	195	246	e28	e5.5	11
26	296	e350	e280	e310	e330	703	427	189	250	e24	4.3	11
27	302	e380	e280	e300	e350	661	432	257	217	30	4.0	11
28	309	e430	e290	e300	e450	662	452	237	204	31	3.7	16
29	296	e450	e300	e320	e600	654	464	294	172	24	e3.5	18
30	294	e430	e290	e320	---	660	469	279	161	17	3.2	19
31	287	---	e300	e320	---	654	---	277	---	e14	3.3	---
Total	7,782	9,509	8,630	8,920	9,770	29,298	15,877	12,168	14,065	1,493	283.1	242.3
Mean	251	317	278	288	337	945	529	393	469	48.2	9.13	8.08
Max	326	450	400	320	600	2,040	642	616	873	152	19	19
Min	168	120	220	220	260	480	427	187	161	14	3.2	3.1
Acre-ft	15,440	18,860	17,120	17,690	19,380	58,110	31,490	24,140	27,900	2,960	562	481

SUMMARY STATISTICS

	Water year 2012	Water years 1938–2012
Annual total	118,037.4	---
Annual mean	323	567
Annual runoff (acre-ft)	234,100	410,500

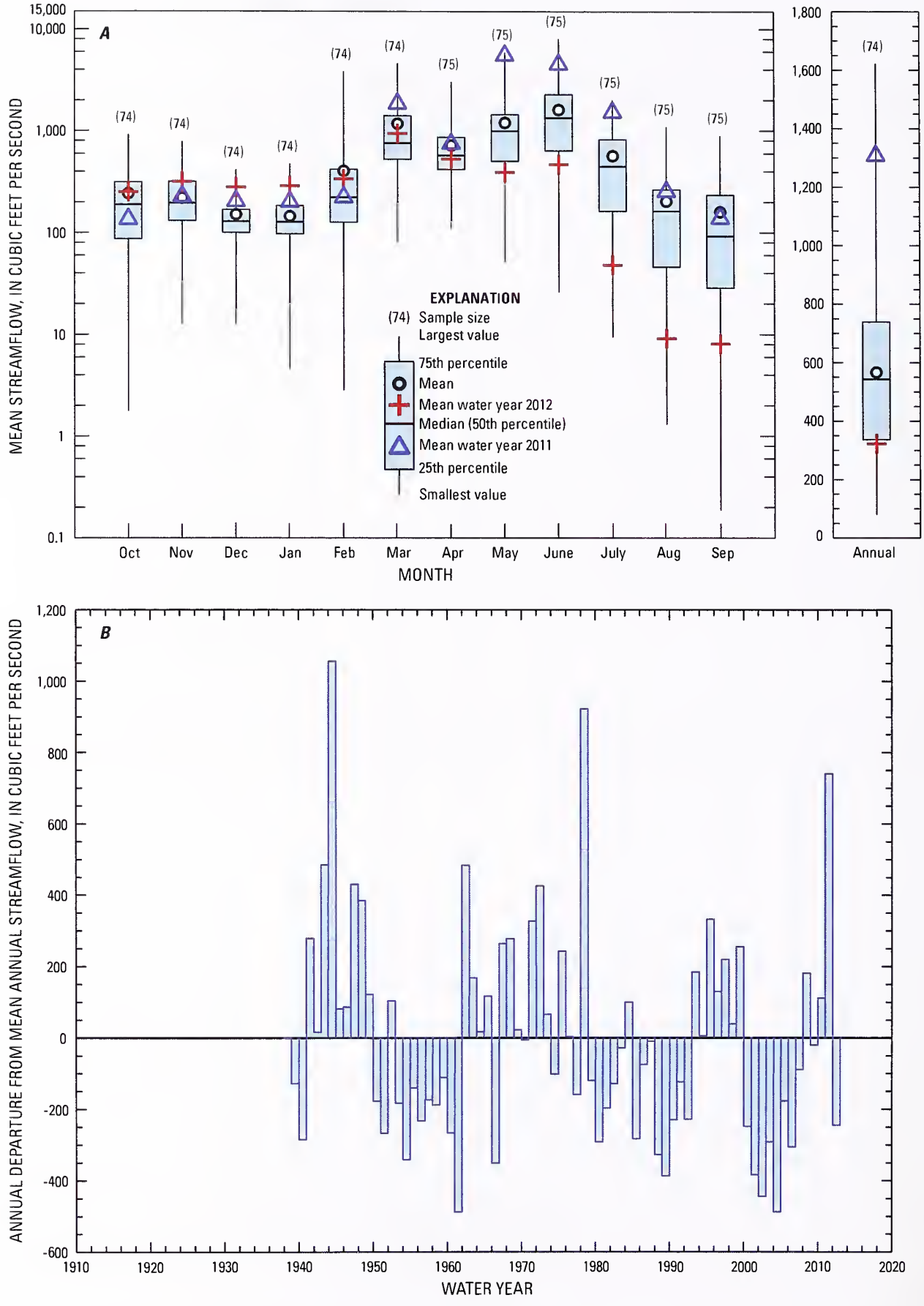

Figure 4. Streamflow data for Powder River near Locate, Mont. (06326500), water years 1938–2012. *A*, Statistical distribution of monthly and annual streamflow. *B*, Annual departure from the mean annual streamflow.

Month-End Contents for Yellowstone River Compact Reservoirs[1] Completed after January 1, 1950

06258900 Boysen Reservoir, Wyo.

LOCATION.--Lat 43°25′00″, long 108°10′37″ referenced to North American Datum of 1927, in $NW^1/_4NW^1/_4$ sec. 16, T.5 N., R.6 E., Fremont County, Hydrologic Unit 10080005, at dam on Wind River and 13 mi north of Shoshoni, Wyo.

DRAINAGE AREA.--7,700 mi^2.

PERIOD OF RECORD.--October 1951 to present (month-end contents only).

GAGE.--Water-stage recorder. Datum of gage is referenced to the National Geodetic Vertical Datum of 1929 (levels by Bureau of Reclamation).

REMARKS.--Reservoir is formed by rock-fill dam completed in October 1951. Storage began October 11, 1951. Usable contents are 701,500 acre-ft between elevation 4,657.00 ft, invert of penstock pipe, and 4,725.00 ft, top of spillway gate. Dead storage is 40,080 acre-ft below elevation 4,657.00 ft. Prior to January 1, 1966, usable contents were 757,900 acre-ft and dead storage was 62,000 acre-ft at same elevations. Between January 1966 and October 1996, usable contents were 742,100 acre-ft and dead storage was 59,880 acre-ft, at same elevations. Crest of dam is at elevation 4,758.00 ft. Water used for irrigation, flood control, and power generation.

COOPERATION.--Elevations and contents table furnished by Bureau of Reclamation.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily contents, 862,500 acre-ft, July 6, 7, 1967, elevation, 4,730.83 ft; minimum daily contents since normal use of water started, 191,900 acre-ft, March 18, 19, 1956, elevation, 4,684.18 ft, capacity table then in use.

EXTREMES FOR WATER YEAR 2012.--Maximum daily contents, 654,800 acre-ft, Oct. 27, 30, Nov. 3, elevation, 4,722.56 ft; minimum daily contents, 473,600 acre-ft, Sept. 30, elevation, 4,711.49 ft.

Table 6. Month-end contents for Boysen Reservoir, Wyo.

[Symbol: --, no data]

Date	Water-surface elevation, in feet	Usable contents, in acre-feet	Change in usable contents, in acre-feet
September 30, 2011	4,722.38	651,500	--
October 31	4,722.54	654,400	2,900
November 30	4,722.34	650,700	-3,700
December 31	4,721.63	637,600	-13,100
January 31, 2012	4,720.90	624,400	-13,200
February 29	4,719.99	608,100	-16,300
March 31	4,719.49	599,300	-8,800
April 30	4,718.80	587,400	-11,900
May 31	4,717.38	563,500	-23,900
June 30	4,718.35	579,700	16,200
July 31	4,715.57	534,400	-45,300
August 31	4,712.97	495,000	-39,400
September 30, 2012	4,711.49	473,600	-21,400
2012 water year			-177,900

[1]Wyoming disagrees with the term "Compact Reservoirs" as used throughout this annual report. Wyoming's acceptance of this annual report should not be construed as Wyoming's acceptance of the use of that term.

06260300 Anchor Reservoir, Wyo.

LOCATION.--Lat 43°39′50″, long 108°49′27″ referenced to North American Datum of 1927, in sec. 26, T.43 N., R.100 W., Hot Springs County, Hydrologic Unit 10080007, at dam on South Fork Owl Creek, 2 mi downstream from Middle Fork, 3 mi southeast of Anchor, and 32 mi west of Thermopolis, Wyo.

DRAINAGE AREA.--131 mi^2.

PERIOD OF RECORD.--November 1960 to present (month-end contents only).

GAGE.--Water-stage recorder. Datum of gage is referenced to the National Geodetic Vertical Datum of 1929 (Bureau of Reclamation bench mark).

REMARKS.--Reservoir is formed by concrete-arch dam completed in 1960. Usable contents are 17,410 acre-ft (revised) between elevation 6,343.75 ft, invert of river outlet, and 6,441.00 ft, spillway crest, including 68 acre-ft below elevation 6,343.75 ft. Prior to October 1, 1971, usable contents were 17,280 acre-ft, including 149 acre-ft below the invert. Water is used for irrigation of land in Owl Creek Basin.

COOPERATION.--Elevations and contents table furnished by Bureau of Reclamation.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily contents, 9,250 acre-ft, July 4, 1967, elevation, 6,418.52 ft; no usable contents on many days some years.

EXTREMES FOR WATER YEAR 2012.--Maximum daily contents, 1,260 acre-ft, Apr. 15, elevation, 6,374.70 ft; minimum daily content, 283 acre-ft, Feb. 29, elevation, 6,356.00 ft.

Table 7. Month-end contents for Anchor Reservoir, Wyo.

[Abbreviation: e, estimated. Symbol: --, no data]

Date	Water-surface elevation, in feet	Usable contents, in acre-feet	Change in usable contents, in acre-feet
September 30, 2011	6,359.50	396	--
October 31	6,360.32	426	30
November 30	6,358.32	356	-70
December 31	6,357.50	330	-26
January 31, 2012	6,357.00	314	-16
February 29	6,356.00	283	-31
March 31	6,370.50	948	665
April 30	6,359.89	410	-538
May 31	6,363.15	542	132
June 30	6,360.31	426	-116
July 31	6,358.48	361	-65
August 31	6,356.58	301	-60
September 19, 2012	6,356.52	299	-2e
2012 water year			-97e

06286400 Bighorn Lake near St. Xavier, Mont.

LOCATION.--Lat 45°18′27″, long 107°57′26″ referenced to North American Datum of 1927, in SW ¼ SE ¼ sec.18, T.6 S., R.30 E., Big Horn County, Hydrologic Unit 10080010, in block 13 of Yellowtail Dam on Bighorn River, 1.3 mi upstream from Grapevine Creek, 15.5 mi southwest of St. Xavier, and at river mile 86.6.

DRAINAGE AREA.--19,626 mi².

PERIOD OF RECORD.--November 1965 to present (month-end contents only). Prior to October 1969, published as "Yellowtail Reservoir." Records of daily elevations and contents on file at the U.S. Geological Survey, Montana Water Science Center in Helena, Mont.

GAGE.--Water-stage recorder located in powerhouse control room. Elevation of gage is 3,296.5 ft, referenced to the National Geodetic Vertical Datum of 1929 (levels by Bureau of Reclamation).

COOPERATION.--Elevations and contents table furnished by Bureau of Reclamation.

REMARKS.--Reservoir is formed by thin concrete-arch dam; construction began in 1961 and was completed in 1967. Storage began November 3, 1965. Usable contents are 1,312,000 acre-ft, between elevation 3,296.50 ft, river outlet invert, and 3,657.00 ft, top of flood control. Elevation of spillway crest is 3,593.00 ft. Normal maximum operating level is 1,097,000 acre-ft, between elevations, 3,640.00 ft and 3,657.00 ft. Minimum operating level is 483,400 acre-ft, elevation, 3,547.00 ft. Dead storage is 16,010 acre-ft, below elevation 3,296.50 ft. All elevations are referenced to the National Geodetic Vertical Datum of 1929. Figures given herein represent usable contents. Water is used for power production, flood control, irrigation, and recreation.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 1,346,000 acre-ft, July 6, 1967, elevation, 3,656.43 ft; minimum since first filling, 519,400 acre-ft, March 11, 2003, elevation 3,572.81 ft.

EXTREMES FOR WATER YEAR 2012.--Maximum contents, 1,040,000 acre-ft, Oct. 12, elevation, 3,642.69 ft; minimum, 777,800 acre-ft, May 10, elevation, 3,614.88 ft.

Table 8. Month-end contents for Bighorn Lake, Mont.

[Symbol: --, no data]

Date	Water-surface elevation, in feet	Usable contents, in acre-feet	Change in usable contents, in acre-feet
September 30, 2011	3,640.35	1,009,000	--
October 31	3,639.30	995,800	-13,200
November 30	3,635.70	953,400	-42,400
December 31	3,630.37	898,700	-54,700
January 31, 2012	3,624.51	848,100	-50,600
February 29	3,619.68	810,900	-37,200
March 31	3,619.58	810,100	-800
April 30	3,615.51	781,900	-28,200
May 31	3,623.20	837,600	55,700
June 30	3,635.19	947,700	110,100
July 31	3,631.75	911,900	-35,800
August 31	3,628.39	880,900	-31,000
September 30, 2012	3,627.98	877,300	-3,600
2012 water year			-131,700

Month-End Contents for Yellowstone River Compact Reservoirs[1] Existing on January 1, 1950

The extent, if any, to which the use of reservoirs in this section may be subject to Compact allocations was not determined. As a matter of hydrologic interest, the month-end usable contents in acre-ft of four reservoirs are given in table 9. Three of the reservoirs (Bull Lake, Pilot Butte Reservoir, and Buffalo Bill Reservoir) are in the Bighorn River Basin, Wyoming, and data on contents were furnished by the Bureau of Reclamation. The usable contents of Buffalo Bill Reservoir was increased in 1992 from 456,600 acre-ft to 644,500 acre-ft (listed as 646,565 acre-ft by Bureau of Reclamation). The Tongue River Reservoir in Montana is operated under the supervision of the Water Resources Division of the Montana Department of Natural Resources and Conservation, who furnished the water-level data and the reservoir-contents table. The usable contents of Tongue River Reservoir increased from 68,000 acre-ft to 79,070 acre-ft in 1999.

Table 9. Month-end contents for Yellowstone River Compact reservoirs[1] existing on January 1, 1950.

Date	Usable contents, in acre-feet[2]			
	06224500 Bull Lake	Pilot Butte Reservoir	06281500 Buffalo Bill Reservoir	06307000 Tongue River Reservoir
September 30, 2011	92,240	20,400	482,700	46,650
October 31	92,350	25,290	452,600	50,790
November 30	93,170	25,020	457,400	50,010
December 31	93,540	24,900	454,500	52,620
January 31, 2012	93,410	24,760	449,400	53,500
February 29	93,560	24,600	442,000	59,610
March 31	93,960	24,410	451,600	54,140
April 30	99,840	27,630	480,600	65,300
May 31	112,100	18,710	502,900	80,260
June 30	149,200	28,240	629,900	79,120
July 31	147,900	20,340	605,200	64,620
August 31	100,100	15,610	520,300	46,370
September 30, 2012	72,500	10,770	448,900	37,940
Change in contents during water year	-19,740	-9,630	-33,800	-8,710

[1]Wyoming disagrees with the term "Compact Reservoirs" as used throughout this annual report. Wyoming's acceptance of this annual report should not be construed as Wyoming's acceptance of the use of that term.

[2] Pre-Compact water rights and post-Compact water rights for these reservoirs are presented in the table, "Water-year-end contents for Yellowstone River Compact reservoirs or lakes."

Water-Year-End Contents for Yellowstone River Compact Reservoirs[1] or Lakes

Month-end usable contents for additional reservoirs of interest to the Yellowstone River Compact are listed in table 10. Anchor Reservoir was built to have a usable contents of 17,400 acre-ft, but sinkholes within the area contained by the dam prevent filling the reservoir to the designed volume, and at present, only 9,250 acre-ft has been adjudicated with an extension to December 31, 2013, for the remaining 8,150 acre-ft.

Table 10. Water-year-end contents for Yellowstone River Compact reservoirs[1] or lakes.

[Contents are in acre-feet. Reservoirs or lakes are listed in alphabetical order by drainage basin. Abbreviation: e, estimated. Symbol: --, no data or not available]

Reservoir or lake name	Pre-compact 1950 water right	Post-compact 1950 water right	Usable contents	Usable contents on Sept. 30, 2012	Usable contents on Sept. 30, 2011	Change in usable contents[2]
Clarks Fork Yellowstone River Basin						
Cooney Reservoir[3]	28,230	--	28,230	10,880	18,080	-7,200
Glacier Lake[3]	4,200	--	4,200	--	--	--
Bighorn River Basin						
(Lake) Adelaide Reservoir[4]	1,450	3,320	4,770	1,330	2,280	-950
Anchor Reservoir[5]	--	9,250	17,400	299e	396	-97e
Bighorn Lake[5]	--	1,312,000	1,312,000	877,300	1,009,000	-131,700
Boysen Reservoir[5]	757,900	--	701,500	473,600	651,500	-177,900
Buffalo Bill Reservoir[5]	456,600	187,900	644,500	448,900	482,700	-33,800
Bull Lake[5]	77,040	--	77,040	72,500	92,240	-19,740
Christina Reservoir[4]	3,860	--	3,860	0	3,800	-3,800
Corral Reservoir[4]	--	1,030	1,030	397	640	-243
Diamond Creek Dike Reservoir[4]	--	18,380	18,380	330	473	-143
Enterprise Reservoir[4]	1,490	204	1,700	0	40	-40
Fairview Extension Reservoir[4]	791	620	1,410	350	1,400	-1,050
Greybull Valley Reservoir[4]	--	33,170	33,170	328	9,390	-9,062
Harrington Reservoir[4]	315	887	1,200	300	800	-500
Lake Cameahwait Reservoir[4]	--	6,680	6,680	4,770	6,680	-1,920
Lake Creek Reservoir[4]	1,370	--	1,370	600	1,370	-770
Lower Sunshine Reservoir[4]	--	58,750	58,750	7,500	28,570	-21,070
Newton Reservoir[4]	4,520	--	4,520	715	250	465
Perkins and Kinney Reservoir[4]	1,200	--	1,200	844	1,040	-196
Pilot Butte Reservoir[5]	34,600	--	34,600	10,770	20,400	-9,630
Sage Creek Reservoir[4]	440	2,340	2,780	2,080	2,580	-500
Shell Reservoir[4]	1,950	--	1,950	64	75	-11
Shoshone Lake Reservoir[4]	9,740	--	9,740	0	70	-70
Sunshine Reservoir[4]	52,990	--	52,990	12,050	51,180	-39,130
Teapot Reservoir[4]	1,580	--	1,580	0	0	0
Tensleep Reservoir[4]	3,510	--	3,510	3,510	1,720	-1,790
Wiley Reservoir[4]	689	331	1,020	887	632	255
Worthen Meadow Reservoir[4]	--	1,500	1,500	920	1,500	-580

Table 10. Water-year-end contents for Yellowstone River Compact reservoirs[1] or lakes.—Continued

[Contents are in acre-feet. Reservoirs or lakes are listed in alphabetical order by drainage basin. Abbreviation: e, estimated. Symbol: --, no data or not available]

Reservoir or lake name	Pre-compact 1950 water right	Post-compact 1950 water right	Usable contents	Usable contents on Sept. 30, 2012	Usable contents on Sept. 30, 2011	Change in usable contents[2]
Powder River Basin						
Cloud Peak Reservoir[4]	3,400	172	3,570	456	3,570	-3,114
Dull Knife Reservoir[4]	--	4,320	4,350	1,080	1,330	-250
Healy Reservoir[4]	--	5,140	5,140	2,840	3,460	-620
Kearney Reservoir[4]	1,850	4,470	6,320	2,000	2,000	0
Lake DeSmet[4]	37,520	197,500	235,000	192,600	204,100	-11,500
Muddy Guard Reservoir[4]	--	2,340	2,340	546	1,010	-464
Posy No. 1 Reservoir[4]	--	1,540	1,540	1,540	1,540	0
Tie Hack Reservoir[4]	1,650	788	2,440	2,020	2,440	-420
Willow Park Reservoir[4]	4,460	--	4,460	1,620	386	1,234
Tongue River Basin						
Bighorn Reservoir[4]	2,750	1,880	4,630	232	1,170	-938
Dome Reservoir[4,6]	1,840	188	2,030	609	1,020	-411
Park Reservoir[4]	7,350	3,020	10,360	2,800	4,350	-1,550
Sawmill Lakes Reservoir[4]	--	1,280	1,280	0	866	-866
Tongue River Reservoir[3]	79,070	--	79,070	37,940	46,650	-8,710
Twin Lakes Reservoir[4,7]	1,180	2,220	3,400	2,380	2,130	250
Willow Creek Reservoir[3]	--	22,900	22,900	--	7,400	--

[1]Wyoming disagrees with the term "Compact Reservoirs" as used throughout this annual report. Wyoming's acceptance of this annual report should not be construed as Wyoming's acceptance of the use of that term.

[2]Change in usable contents is derived from subtracting the 2011 usable contents from the 2012 usable contents.

[3]Reservoir managed by the State of Montana.

[4]Private reservoirs permitted and accounted for by the State of Wyoming.

[5]Reservoirs managed by Bureau of Reclamation.

[6]Data are combined contents of Dome Lake and Dome Lake Reservoir.

[7]Data are combined contents of Twin Lakes Number 1 and Twin Lakes Number 2.

RULES AND REGULATIONS FOR ADMINISTRATION OF THE YELLOWSTONE RIVER COMPACT

A compact, known as the Yellowstone River Compact, between the States of Wyoming, Montana, and North Dakota, having become effective on October 30, 1951, upon approval of the Congress of the United States, which apportions the waters of certain interstate tributaries of the Yellowstone River which are available after the appropriative rights existing in the States of Wyoming and Montana on January 1, 1950 are supplied, and after appropriative rights to the use of necessary supplemental water are also supplied as specified in the Compact, is administered under the following rules and regulations subject to the provisions for amendment revision or abrogation as provided herein.

Article I. Collection of Water Records

A. It shall be the joint and equal responsibility of the members of the States of Wyoming and Montana to collect, cause to be collected, or otherwise furnish records of tributary streamflow at the points of measurement specified in Article V (B) of the Compact, or as near thereto as is physically or economically feasible or justified.

1. Clarks Fork

The gaging station known as Clarks Fork near Silesia, Montana and located in NW1/4 SE1/4 sec. 1, T. 4 S., R. 23 E., shall be the point of measurement for the Clarks Fork.

2. Bighorn River (exclusive of Little Bighorn River)

The gaging station known as the Bighorn River above Tullock Creek, near Bighorn, Montana, and located in SE1/4 SE1/4 NE1/4 sec. 3, T. 4 N., R. 34 E., shall temporarily be the designated point of measurement on that stream. The flow of the Little Bighorn River as measured at the gaging station near Hardin, Montana, and located in SE1/4 NE1/4 NE1/4 sec. 19, T. 1 S., R. 34 E., shall be considered the point of measurement for that stream, except that if or when satisfactory records are not available, the records for the nearest upstream station with practical corrections for intervening inflow or diversion shall be used.

3. Tongue River

The gaging station known as the Tongue River at Miles City, Montana, and located in NE1/4 NE1/4 SE1/4 sec. 23, T. 7 N., R. 47 E., shall temporarily be the point of measurement for that stream.

4. Powder River

The gaging station known as the Powder River near Locate, Montana, and located in NW1/4 SW1/4 sec. 14, T. 8 N., R. 51 E., shall temporarily be the designated point of measurement for that stream.

B. Records of total annual diversion in acre-feet above the points of measurement designated in the Compact for irrigation, municipal, and industrial uses developed after January 1, 1950, shall be furnished by the members of the Commission for their respective States, at such time as the Commission deems necessary for interstate administration as provided by the terms of the Compact. Providing that if it be acceptable to the Commission, reasonable estimates thereof may be substituted.

C. Annual records of the net change in storage in all reservoirs, not excluded under Article V (E) of the Compact, above the point of measurement specified in the Compact and completed after January 1, 1950, and the annual net change in reservoirs existing prior to January 1, 1950, which is used for irrigation, municipal, and industrial purposes developed after January 1, 1950, shall be the primary responsibility of the member of the Commission in whose State such works are located; providing such data are not furnished by Federal agencies under the provisions of Article III (D) of the Compact, or collected by the Commission.

Article II. Office and Officers

A. The office of the Commission shall be located at the office of the Chairman of the Commission.

B. The Chairman of the Commission shall be the Federal representative as provided in the Compact.

C. The Secretary of the Commission shall be as provided for in Article III of these rules.

D. The credentials of each member of the Commission shall be placed on file in the office of the Commission.

Article III. Secretary

A. The Commission, subject to the approval of the Director of the United States Geological Survey, shall enter into cooperative agreements with the U.S. Geological Survey for such engineering and clerical services as may reasonably be necessary for the administration of the Compact. Said agreements shall provide that the Geological Survey shall:

1. Maintain and operate gaging stations at or near the points of measurement specified in Article V (A) of the Compact.

2. Assemble factual information on stream flow, diversion, and reservoir storage for the preparation of an annual report to the Governors of the signatory States.

3. Make such investigations and reports as may be requested by the Commission in aid of its administration of the Compact.

B. The Geological Survey shall act as Secretary to the Commission.

Article IV. Budget

A. At the annual meeting of each even-numbered year or prior thereto, the Commission shall adopt a budget for operation during the ensuing biennium beginning July first. Such budget shall set forth the total cost of construction, maintenance and operation of gaging stations, the cost of engineering and clerical aid, and other necessary expenses excepting the salaries and personal expenses of the Commissioners. On odd-numbered years revisions of the budget shall be considered.

B. It shall be the obligation of the Commissioners of the States of Montana and Wyoming to endeavor to secure from the Legislature of their respective States sufficient funds with which to meet the obligations of this Compact, except insofar as provided by the Federal government.

Article V. Meetings

An annual meeting of the Commission shall be held each November at some mutually agreeable point in the Yellowstone River Basin for consideration of the annual report for the water year ending the preceding September 30th, and for the transaction of such other business consistent with its authority; provided that by unanimous consent of the Commission the date and place of the annual meeting may be changed. Other meetings as may be deemed necessary shall be held at a time and place set by mutual agreement, for the transaction of any business consistent with its authority.

No action of the Commission shall be effective until approval by the Commissioners for the States of Wyoming and Montana.

Article VI. Amendments, Revisions and Abrogations.

The Rules and Regulations of the Commission may be amended or revised by a unanimous vote at any meeting of the Commission.

Gary Fritz
Commissioner for Montana

George L. Christopulos
Commissioner for Wyoming

ATTESTED:

L. Grady Moore
Federal Representative

Adopted November 17, 1953
Amended December 16, 1986

RULES FOR THE RESOLUTION OF DISPUTES OVER THE ADMINISTRATION OF THE YELLOWSTONE RIVER COMPACT

December 19, 1995

Section I. General Framework

According to Article III(F) of the Yellowstone River Compact,

"In case of the failure of the representatives of Wyoming and Montana to unanimously agree on any matter necessary to the proper administration of this compact, then the member selected by the director of the United States Geological Survey shall have the right to vote upon the matters in disagreement and such points of disagreement shall then be decided by a majority vote of the representatives of the states of Wyoming and Montana and said member selected by the director of the United States geological survey, each being entitled to one vote."

Section II. Purpose and Goal

A. The purpose of these rules is to clarify and more fully develop the dispute resolution process outlined in Section I.

B. The goal of the dispute resolution process outlined in these rules is to encourage joint problem solving and consensus building. It consists of three phases -- unassisted negotiation, facilitation, and voting.

C. Any agreement reached through this process is binding on Montana, Wyoming, and the United States Geological Survey (USGS).

D. Either state can initiate the dispute resolution process defined in Sections IV, V, and VI, and the other state is obligated to participate in good faith. The states agree that the issues pursued under this dispute resolution process shall be both substantive and require timely resolution.

Section III. Consensus

A. In the process of administering the Yellowstone River Compact, the representatives from Montana and Wyoming agree to seek consensus.

B. For purposes of this rule, consensus is defined as an agreement that is reached by identifying the interests of Montana and Wyoming and then building an integrative solution that maximizes the satisfaction of as many of the interests as possible. The process of seeking consensus does not involve voting, but a synthesis and blending of alternative solutions.

Section IV. Unassisted Negotiation

A. In all situations, the representatives from Montana and Wyoming shall first attempt to seek consensus through unassisted negotiation. The federal representative will not serve as chairperson in the unassisted negotiation process.

B. During a negotiation process, the representatives from Montana and Wyoming shall identify issues about which they differ, educate each other about their needs and interests, generate possible resolution options, and collaboratively seek a mutually acceptable solution.

C. To help facilitate negotiations, the representatives from Montana and Wyoming in cooperation with the USGS agree to share technical information and develop joint data bases. Other data sources may also be used.

D. The USGS shall serve as technical advisor in the two-state negotiations.

Section V. Facilitation

A. If the representatives from Montana and Wyoming are not able to reach consensus through unassisted negotiation, they shall each identify, articulate, and exchange, in writing, the unresolved issues.

B. The representatives from Montana and Wyoming shall then jointly appoint a facilitator to assist in resolving the outstanding dispute. If the representatives from Montana and Wyoming cannot identify a mutually acceptable facilitator, the representative appointed by the USGS shall appoint a facilitator.

C. A facilitator, for purposes of this rule, is defined as a neutral third party that shall help the representatives from Montana and Wyoming communicate, negotiate, and reach agreements voluntarily. The facilitator is not empowered to vote or render a decision.

D. The facilitator shall assist the representatives from Montana and Wyoming in developing appropriate ground rules for each facilitated session including establishing a deadline for completion of the facilitation process, setting an appropriate agenda, identifying issues, collecting and analyzing technical information, developing options, packaging agreements, and preparing a written agreement. The facilitator reserves the right to meet privately with each representative during the facilitation process.

Section VI. Voting

A. If, and only if, the representatives from Montana and Wyoming are unable to reach consensus with the assistance of a facilitator, then a dispute may be settled by voting.

B. The representatives from Montana and Wyoming, along with the representative appointed by the director of the USGS, are each entitled to one vote.

C. If the USGS representative does not vote in accordance with Article III, then the director of the USGS will select, with concurrence from Wyoming and Montana, a neutral third party to vote.

D. If the representative appointed by the director of the USGS is not involved in the steps outlined in Sections IV and V, each state shall have the opportunity to present appropriate information to that representative. This information may be presented through both oral presentations and written documents. All information will be shared with the other state.

   The representative of the USGS may also consult the facilitator referenced in Section V in an attempt to resolve any disputes.

E. The USGS shall pay the expenses of the representative appointed by the director of the USGS.

F. Points of disagreement shall be resolved by a majority vote.

Section VII. Funding

A. The USGS will pay one-half and the states of Montana and Wyoming shall each pay one-quarter of the expenses of the facilitator, which shall not exceed $10,000, unless agreed to by both states and the USGS.

Section VIII. Amendments

A. These rules may be amended or revised by a unanimous vote of the Commission.

Section IX. Execution

These rules for the resolution of disputes over the administration of the Yellowstone River Compact are hereby executed on the date indicated below.

Gary Fritz
Commissioner for Montana

Gordon W. Fassett
Commissioner for Wyoming

William F. Horak
Federal Representative

July 22, 1996
Date

RULES FOR ADJUDICATING WATER RIGHTS ON INTERSTATE DITCHES

Article I. Purpose

The purpose of this rule is to determine and adjudicate, in accordance with the laws of Montana and Wyoming, those pre-Compact (January 1, 1950) water rights diverting from the Powder, Tongue, Bighorn and Clarks Fork Rivers and their tributaries where the point of diversion is in one State and the place of use is in the other State which have not yet been adjudicated.

Article II. Authority

In accordance with the Yellowstone River Compact, the State of Montana and the State of Wyoming, being moved by consideration of interstate comity, desire to remove all causes of present and future controversy between the States and between persons in one State and persons in another State with respect to these interstate ditches. Article III (E) of the Compact provides the Yellowstone River Compact Commission with the authority "...to formulate rules and regulations and to perform any act which they may find necessary to carry out the provisions of this Compact...."

Article III. Definitions

The terms defined in the Yellowstone River Compact apply as well as the following definitions:

1. "Acre-feet" means the volume of water that would cover 1 acre of land to a depth of 1 foot.

2. "Cfs" means a flow of water equivalent to a volume of 1 cubic foot that passes a point in 1 second of time and is equal to 40 miners inches in Montana.

3. "Interstate Ditches" shall include ditches and canals which convey waters of the Bighorn, Tongue, Powder, and Clarks Fork Rivers and their tributaries across the Wyoming-Montana State line where the water is diverted in one State and the place of use is in the other State.

4. "Department of Natural Resources and Conservation," hereafter called the "Department," means the administrative agency and Department of the Executive Branch of the Government of Montana created under Title II, Chapter 15, MCA which has the responsibility for water administration in that State.

5. "Water Court" means a Montana District Court presided over by a water judge, as provided for in Title III, Chapter 7, MCA.

6. "State Engineer" shall be the current holder of the position created by the Wyoming Constitution as Chief Water Administration Official for the State of Wyoming.

7. "Board of Control," hereinafter called the "Board," is defined as the constitutionally created water management agency in Wyoming composed of the four Water Division Superintendents and the State Engineer.

8. "Superintendent" is the member of the Board who is the water administration official for the Water Division where the interstate ditch is located. (The two Water Divisions in the Yellowstone River drainage are Water Division Numbers Two and Three.)

9. "Date of Priority" shall mean the earliest date of actual beneficial use of water, unless evidence and circumstances pertaining to a particular claim establish an earlier date.

10. "Point of Diversion" is defined to be the legal land description by legal subdivision, section, township, and range of the location of the diversion structure for an interstate ditch from a natural stream channel.

11. "Place of Use" is defined to be the legal land description (legal subdivision, section, township, and range) of the lands irrigated by an interstate ditch.

12. "Person" is defined as an individual, a partnership, a corporation, a municipality or any other legal entity, public or private.

13. "Claimant" is defined as any person claiming the use of water from an interstate ditch as herein defined.

Article IV. Procedures

The procedures for determining and adjudicating water rights associated with interstate ditches shall be categorized as follows: (A) Where the point of diversion is in Wyoming and place of use in Montana, and (B) Where the point of diversion is in Montana and place of use in Wyoming.

A. Wyoming Procedure

1. The Yellowstone River Compact Commission will provide a claim form to be completed by the claimant that will describe the location and point of diversion and land being irrigated, the priority date claimed, method of irrigation and such other information required to describe the claim. (A sample form for this purpose is attached.)

2. The Yellowstone River Compact Commission will send the claim form to water users on the interstate ditches.

3. Water users will complete the claim form and file it with the Yellowstone Compact Commission, which, when found to be correct and complete, will be forwarded to the Board for verification.

4. Upon receipt of the form, the Board shall forward it to the appropriate Superintendent, who, in cooperation with the Department, will validate the information including the use that has been made of the water, the number of acres and location of lands being irrigated, the priority date, and all other relevant information. The Superintendent and the Department will utilize aerial photography and other information to have prepared a reproducible map showing the location of the ditch system, lands irrigated, point of diversion, etc., of the claim.

5. After the validation procedure, the Superintendent will hold a hearing, after appropriate notice and advertisement, at which time the claimant shall describe, in detail, the use that has been made of the water and the lands that are being irrigated, establish a priority date, etc. Costs incurred in advertising shall be paid by the claimant. If a single hearing is held to consider several claims, the costs of advertising shall be shared equally among the claimants. Anyone who opposes the claim shall appear and state the reasons, if any, for opposition to the claim. If there is no opposition to the claim, cost incurred in holding the hearing shall be paid by the claimant. If protestants do appear and oppose the claim, hearing costs will be paid 50 percent by the claimant and 50 percent by the protestant, or if there is more than one protestant, the remaining 50 percent shall be shared equally among the protestants.

6. At the conclusion of the hearing, the Superintendent shall forward the record to the Yellowstone River Compact Commission with his findings and recommendations. The Yellowstone River Compact Commission will make the

determination of the amount of the right, the location, and the priority date, and then send the record to the Board.

7. The Board shall review the record and integrate it into its water rights system. Upon entry of the record by the Board, the information shall be forwarded to the Department and the Chairman of the Yellowstone River Compact Commission.

8. Upon the entry of the right into the Board's records, it will have the following attributes:

   a. The right will be a Wyoming water right with a priority date as established by this procedure.

   b. The amount of the right will be determined as provided by Wyoming law.

B. Montana Procedure

1. The Yellowstone River Compact Commission will provide a claim form to be completed by the claimant that will describe the location and point of diversion and land being irrigated, the priority date claimed, method of irrigation and such other information required to describe the claim.

2. The Commission will send the claim form to water users on the interstate ditches.

3. Water users will complete the claim form and file it with the Yellowstone River Compact Commission, which, when found to be correct and complete, will be forwarded to the Department for verification.

4. Upon receipt of the form, the Department, in cooperation with the Wyoming State Engineer's Office, will validate the information, including the use that has been made of the water, the number of acres and location of lands being irrigated, the priority date, and all other relevant information. The appropriate Superintendent and the Department will utilize aerial photographs and other information to have prepared a reproducible map showing the location of the ditch system, land irrigated, point of diversion, etc., of the claim.

5. The Department will then forward the record to the Yellowstone River Compact Commission with its findings and recommendations. Upon approval by the Commission, the record shall be submitted to the Montana Water Court for adjudication. A duplicate record will be forwarded to the Wyoming State Engineer's Office, the Board, and the Chairman of the Yellowstone River Compact Commission upon adjudication.

6. Upon adjudication of the right by the Montana Water Court, it will have the following attributes:

   a) The right will be a Montana water right with a priority date as established by this procedure.

   b) The amount of the right will be determined as provided by Montana law.

Article V. Exclusions

A. These rules recognize the limitation in Article VI of the Yellowstone River Compact regarding Indian water rights.

B. These rules shall not be construed to determine or interpret the rights of the States of Wyoming and Montana to the waters of the Little Bighorn River.

Article VI. Claim Form Submission Period

All claims must be submitted to the Yellowstone River Compact Commission, c/o District Chief, United States Geological Survey, 821 E. Interstate, Bismarck, ND 58501, within 90 calendar days after the claimant has received the claim form from the Commission. The blank claim form will be sent certified mail to the water user and the submission period of 90 calendar days will begin with the next day following receipt of the form, as evidenced by the certified mail receipt card. For good cause shown in writing, an extension of time beyond the 90 days for submittal may be obtained from the Commission.

YELLOWSTONE RIVER COMPACT COMMISSION

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DEPT. OF NATURAL RESOURCES & CONSERVATION
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(406) 444-6603

YELLOWSTONE RIVER COMPACT COMMISSION

CLAIM FORM FOR INTERSTATE DITCHES

1. Name of ditch or canal: _____

2. Source of water supply: _____

   Tributary of _____

3. Name of claimant: _____

   Address _____

   City _____ State _____ Zip Code _____

   Home Phone No. _____ Business Phone No. _____

4. Person completing form: _____

   Address _____

   City _____ State _____ Zip Code _____

   Home Phone No. _____ Business Phone No. _____

5. Method of irrigation: _____

6. Point of diversion: County _____ State _____

   Headgate located in the ___¼ ___¼, Section ____, T.___R.____

   (a) Description of headgate: (Briefly describe the materials and general features, date constructed or last known work, general condition.) _____

   _____

   _____

(b) Describe water measuring device: _____

_____

_____

(c) If the point of diversion is in Montana:

1. What flow rate has been claimed?

_____ ☐ cubic feet per second

☐ gallons per minute

☐ miner's inches

2. What volume of water has been claimed?

_____ acre-feet

7. Dimensions of ditch at headgate: Width at top (at waterline) _____ feet; width at bottom _____ feet; side slopes (vertical:horizontal) _____:_____; depth of water _____ feet; grade _____ feet per mile.

8. Place of use and acres irrigated: County_____ State ____ Give legal subdivisions of land owned by you on which water is being used (acres claimed): An example field is shown in the first line.

T.	R.	SEC.	NE¼				NW¼				SW¼				SE¼				TOTAL
			NE¼	NW¼	SW¼	SE¼	NE¼	MW¼	SW¼	SE¼	NE¼	NW¼	SW¼	SE¼	NE¼	NW¼	SW¼	SE¼	
58N	95W	18			25.1											10.2			35.3

9. Describe any additional uses of water claimed from the ditch: _____

10. Date of first beneficial use of water (priority date) on lands described above for _____ Ditch is_____ (mo/day/yr) and shall be the same for all lands claimed on this form.

11. Has irrigation water been diverted onto all lands shown in the above tabulation each year since completion of works?__ If not, state exceptions and reasons therefore: _____

_____

_____

12. Attach documentary evidence or affidavits showing your ownership or control of the above lands, as well as the historic use of water on these lands. _____

_____

_____

13. What permit or claim numbers have been assigned to known records filed with either the Wyoming State Engineer's Office or the Montana Department (DNRC) for irrigating the above lands? _____

_____

_____

14. Have personnel in the Wyoming State Engineer's Office or the Montana Department (DNRC) been contacted to obtain the information given in No. 13? ( ) Yes ( ) No

15. Describe any flumes or pipelines in the ditch conveyance system:_____

_____

_____

16. Describe ordinary annual period of use: _____ to _____
(mo/day) (mo/day)

_____.

17. Attach copies of aerial photographs, U. S. Geological Survey maps or other such documents showing the ditch and lands irrigated that give evidence to this claim and may be useful to the Commission.

* * * * * * * * * * *

State of _____)
) SS
State of _____)

I, _____, having been duly sworn, depose and say that I, being of legal age and being the claimant of this claim for a water right, and the person whose name is signed to it as the claimant, know the contents of this claim and the matters and things stated there are correct.

_____

_____

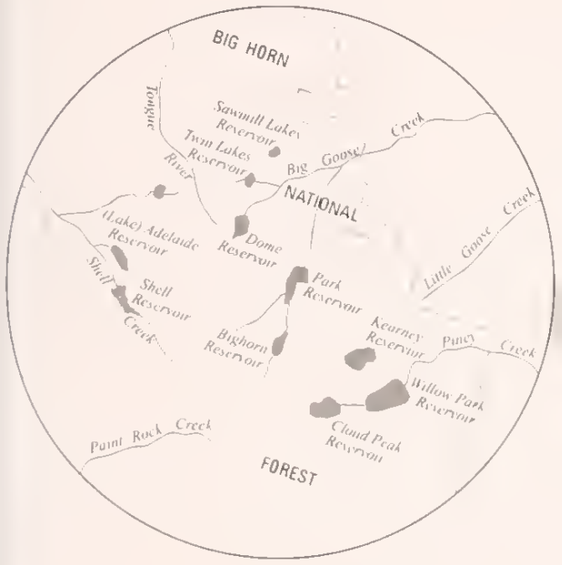
Subscribed and sworn before me, this ____day of _____, 19__.

_____
Notary Public

Residing at: _____

My commission expires: _____

LOCATION MAP



YELLOWSTONE RIVER COMPACT COMMISSION

YELLOWSTONE RIVER BASIN

EXPLANATION

▲ COMPACT STREAMFLOW-GAGING STATION

▮ COMPACT RESERVOIR-CONTENT STATION

06260300 STATION NUMBER

0 10 20 30 40 MILES

0 10 20 30 40 KILOMETERS